

Railway Age

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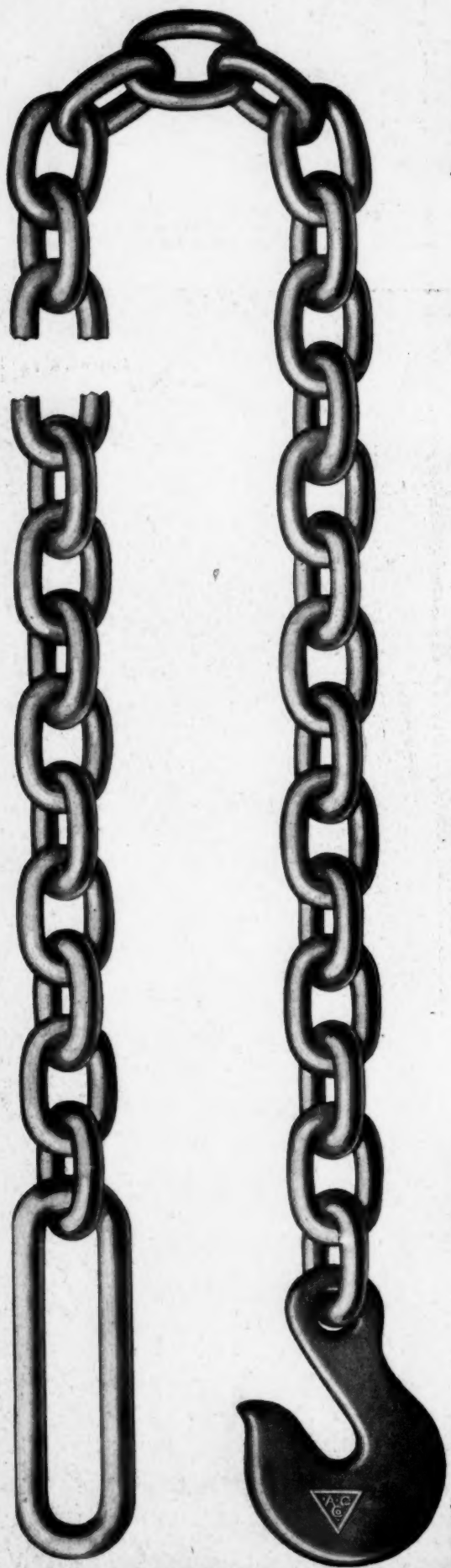
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EDITORIAL

Railway Age

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While the present shortage of transportation facilities calls for the maximum united effort on the part of the roads as a whole, as well as the most intensive

Local Initiative
Is
Necessary
concentration on the part of the individual roads, it also demands the greatest individual initiative and interest on the part of each local officer.

The division superintendent who complies faithfully with the orders of his management and of the Commission on Car Service, but who goes no further, is not rising to the present emergency. There is much more that he can do to meet those conditions which are more or less local to his territory. Thus on one road a number of the superintendents check over the cars awaiting unloading on their industry and team tracks late each week and then write personal letters to those industries asking them to work Saturday afternoon and Sunday, if necessary, to release these cars promptly. It is only by each local officer seeing that delays in his territory are reduced to the minimum, that the performances of the entire system, and of the railways as a whole can be brought to the highest possible point. While the concentration of the attention of the managements is vital to success, it is even more important that the local officers rise to their maximum opportunities.

No business or enterprise can be successful unless it has a substantial foundation, and similarly maintenance of way

Just To Be
"King"
For a Day
forces can never attain their highest development until they are strengthened and built up step by step from the bottom. One of the steps in this work has been the so-called inspection

trips participated in by superintendents, engineers maintenance of way, division engineers, supervisors, etc., and to some extent by the section foremen. While these trips are both necessary and valuable, they are looked forward to with dislike and participated in with reluctance on the part of the foreman. At best he is given little opportunity to see what other foremen are doing and in passing over the two or three sections (the maximum he usually gets to go over and with which he is already more or less familiar) he has little opportunity of learning anything new or of value. The effect of the presence of the higher officers is a further hindrance in his acquiring much besides criticism. In the end, he steps off the car with a feeling that if he could only go over more of the line and have a real chance to see and talk with others more intimately connected with his work he could "beat some of these brass collars to it." A man in this position cannot be expected to see his work from the viewpoint of a higher officer when he has never been given an opportunity to acquire that viewpoint. Regular inspection trips composed of a large number of foremen and a few understanding supervisors or division engineers can work wonders. The results of the first trip might be negligible but on the second and succeeding trips a keen interest would be developed in this crowd of "acting" supervisors and engineers. No man is so old that he is not more or less swayed by a sense of acting and where that craving is satisfied once in a while with the proper goal in

view, better men are developed. Let each foreman be a "King" for a day and a road will have bigger, broader men and real *esprit de corps*.

From New England, whence came the tales of frenzied finance, now comes the story of locomotive fuel purchased at \$27 a ton. From an important western road with a big coal field on its own rails comes the report that scarcely enough coal for present needs is being received at a time of the year when it

Frenzied Fuel

has been customary to store fuel for the coming winter. Clearly, a crisis is at hand; and even if averted by an unlooked-for increase in the available fuel supply, the necessity for conserving every possible pound of coal will still be with us. Will your railroad find a way to get more work out of every pound of coal that is placed in locomotive and stationary fireboxes? If every decrepit locomotive could be replaced with a new one or, better still, if every antiquated locomotive in the service could be modernized over-night, the fuel problem would of course be postponed; but what the railroads are up against today is the problem of making the most of the means immediately at hand. There is not a railroad in the country that is doing *all* that can be done with the facilities at hand to get the greatest good out of every dollar paid for fuel. The *Railway Age* has ten constructive suggestions to offer in succeeding issues, none of which can well be ignored if you would make the most of the means at hand to reduce the fuel bill and conserve coal for the coming winter. They will be referred to as the ten fuel commandments.

The appeal of the railway executives to move freight cars 30 miles a day must, if it is to have fruitful results, be worked into the consciousness of enginemen, freight conductors, yardmen and other employees who have duties in connection with car movement; the action of the Erie in using posters for this purpose was noticed in our issue of July 30, page 173. In this connection a Boston correspondent writes—

Money as a Stimulant of Efficiency

You said in a recent editorial note that "No officer can afford to overlook any means of increasing the efficiency of his freight-car movement." That note suggests one obvious means which substantially all officers do overlook, namely, the appropriation of money to give men premiums for making extra effort. For years the roadway department has paid prizes for excellence, and has found satisfaction in so doing; how is it that we so rarely hear of anything of this kind in other departments? Roadway prizes were started by a managing officer possessed of courage. He was followed by a few others who had initiative and courage. In the operating department there are numbers of officers who have initiative or courage; but the world is waiting to see a larger number who have both. The difference between asking every man to do his share (by means of a poster "conspicuously placed on a bulletin board") and actually getting him to do his share, is the difference between preaching and teaching, is it not? The futility of preaching (except when Billy Sunday or some other modern prophet gets up steam) is proverbial; but teaching brings results; results for which men freely pay large money every day.

A prize will not take the place of a teacher, but there is no doubt whatever that it has induced innumerable track foremen to teach themselves. And this where there was only a chance of winning. Why not offer to yardmasters, freight conductors, and others a reward for suggestions in writing

on quick car movement? A reward, that is, of such character that every individual can receive some return—if he complies with the conditions. Suggestions in writing are not the same as moving a car, but they may be true and profitable exercise, nevertheless. To induce men to think is an excellent thing; but it is better still to get ocular evidence of their mental activity.

It seems to be universally agreed that the increase in freight rates and passenger fares is going to have a favorable effect on the car and locomotive markets.

Orders for Equipment

Many of the business and financial writers profess to have observed signs that the expected after-the-war decline in business is already in our midst.

But, one and all, in speaking in this wise, express the opinion that the equipment market will probably be excepted from any decline that may manifest itself in industry in general. The fact that the Interstate Commerce Commission has set the rate increase at a figure which will permit the carriers to earn 6 per cent rather than $5\frac{1}{2}$ per cent on their value and has asked the roads to make reports as to the manner in which they use the additional one-half of one per cent for improvements which may be charged to capital account lends standing to this belief. The new status makes it particularly interesting to see just what has been done in the way of purchases of cars and locomotives so far this year, as reported in the *Railway Age*.

	Locomotives		Freight cars		Passenger cars	
	Dom.	For.	Dom.	For.	Dom.	For.
January	32	213	2,220	1,080	7	...
February	378	86	6,392	516	35	...
March	260	71	10,136	625	240	...
April	469	108	23,528	350	373	...
May	202	9	7,402	207	107	22
June	69	50	3,757	375	...	...
July	97	77	5,732	52	60	10
	1,507	614	59,167	3,205	822	32

The totals are by no means record breakers, but they are larger, we imagine, than most of our readers may have expected. With the improvement in the railroads' earnings resulting from the rate increase, the business for the remainder of the year should be even more satisfactory.

Were it not for certain political considerations which apply in Canada but have no parallel here, it would seem that

The Canadian Situation

a Canadian railway rate advance would be granted on a scale to correspond with the advance just authorized by the Interstate Commerce Commission. The present danger, however, lies in

the fact that it is questionable whether even a rate increase as large as that granted by the Interstate Commerce Commission would be sufficient to permit the newly acquired government railways to earn their expenses and fixed charges. On the other hand, a rate increase such as that in the United States would permit the Canadian Pacific to return to a sound profitable basis of operation. Of course the Canadian taxpayers will have to make up the deficit on the government railways in any case. It would be only a short-sighted and most unstatesmanlike politician who would hesitate to put all Canadian railroad rates on a sound basis because there might be the immediate appearance of an advantage gained by the Canadian National Railways over the privately owned Canadian Pacific if rates were not raised. The stockholders would have to face the loss on the Canadian Pacific which the taxpayers generally would absorb for the National Railways. In the long run, such a policy might prove disastrous in the extreme to the entire Dominion.

The Canadian Pacific is the greatest asset which the Canadian people have, despite the fact that it is operated for private stockholders. To destroy the credit of this corporation and thus prevent continued development of a property which is so essential to Canadian welfare is to court disaster on a huge scale. The Canadian people have entered on a dangerous enough experiment as it is with their nationalized system of as yet largely unprofitable railways. Their best chance would certainly appear to be to base their hopes of future profitable development of the National Railways on strict adherence to sound economic principles and to prescribe rates which will as nearly as possible permit of operating the National Railways without further recourse to the taxpayer.

Readers of the *Railway Age* are already familiar with the work that has been done by John P. Risque, who was recently sent by this paper to South

Markets in South America

America to investigate the markets for railway supplies on that continent. The *Railway Age* has published five articles by Mr. Risque—three on the sugar-cane railways of Cuba in the issues of October 17, 24, and 31, 1919, respectively, and two on the main line railways of Cuba in the issues of January 16 and 23, 1920, respectively. These articles were prepared before, or at the early part of, his trip, and were published before he had started on the main part of the trip through South America. Mr. Risque has now completed his South American journey, and the first article of a series dealing with the railways that he investigated will be found on another page of this issue. Mr. Risque in the first article outlines the trip he made and sketches briefly some of the outstanding features of the railways of the several countries visited. He went first down the west coast, visiting on his way south Ecuador, Peru, Bolivia and Chile. He then crossed to Buenos Aires on the Trans-Andine Railway, spent some time in Argentina, in Uruguay and Brazil. The first article contains also his conclusions as to the markets for American railway supplies in South America. His attention was struck by the well-known predominance of the British interests throughout most of the Southern continent—except in Chile where the railroads are government owned. He shows himself very optimistic concerning the possibilities in Chile, but expresses the opinion very plainly that it will be a long uphill proposition to sell American goods to the British controlled railways, which prefer to make their purchases in England and to English designs.

Locomotive development can have but one big objective, that is plainly an increase in efficiency and capacity. Ten or fifteen years ago designers had reached the size limit and were building great clumsy, bulky engines, compared with modern power. Since that day every increase in size or efficiency has only been made possible through refinement. To renounce these refinements would set an absolute limit on both efficiency and capacity. A Mallet locomotive would be helpless without a mechanical stoker, it would be useless without a power reverse gear, it would be powerless without an arch, it would be hopeless without superheat, and the day will surely come when it will be a joke without a feedwater heater, improved boiler circulation and many other refinements. What would the cylinders of a modern Mikado amount to without superheat and a boiler of modern dimensions? What would this modern boiler evaporate without a brick arch and a

stoker? Let anyone who thinks that plain engines will answer, consider the interdependence of these parts, bearing in mind that no chain is stronger than its weakest link. The development of the locomotive has, in fact, become so wholly dependent upon these refinements, and its future development hinges so largely upon their further application that to revert to plain engines would so limit capacity and increase fuel consumption as to literally take the heart out of railroading.

Delays to traffic are likely to occur on stretches of track approaching yards. With the heavy business of the past year or two, such tendencies have been increased. In order to shorten the blocks, and where manual block signals are in service, to facilitate the movement of traffic, it has been necessary in some cases to open additional block offices. This, however, means an added expense because of the employment of three operators for each 24-hour block station. At such locations, the installation of a few miles of automatic block signals will reduce materially the delays experienced (which are an expense) as well as decrease the cost of operation in addition to providing greater flexibility of train operation. On one road it was found that with the present track layout and before the installation of 22 miles of automatic signals extending from the end of a yard it would have been necessary to install three offices with continuous service in order to establish blocks, and that even with this additional expense a delay of approximately twenty-five minutes per train would result, but that after the installation of the automatic signals the road was able to eliminate the expense of operators at three former continuous offices and two trick operators at another place. This saving was accomplished in addition to the elimination of delays and the improvement of train movement. In order to place the railroads on as efficient an operating basis as possible, the use of automatic signals approaching certain yard locations should now receive the careful consideration of railway officers.

Prevent Traffic Congestion Near Yards

The possibility of adding 75,000 to 80,000 serviceable cars to the present inadequate supply by catching up on car repairs has already been pointed out in these columns. This cannot be done safely by any short cut depending on the patching up of cars now badly in need of heavy repairs. It is true that there are many difficulties in the way of giving all of these cars a thorough overhauling, including the application of the betterments which many of them require before they will be fit for service under modern operating conditions. But the removal of at least one of the obstacles seriously delaying this work is within the control of the roads themselves. Material required for the extensive rebuilding and betterment programs in most cases has been on order for months and the supply industry is ready to deliver it. Once loaded for shipment, however, the responsibility for delivery falls on the roads themselves. Unfortunately these materials are generally regarded as dead freight which may be buried and forgotten in the face of the urgent demands of commercial traffic. In one instance several hundred coal cars stood on a track adjoining a contract repair shop for a month awaiting material for general repairs which was somewhere on the road but could not be delivered. Unless the railroads give special attention to the movement of material required for car repairs, there is little hope of preventing the percentage of bad order cars from increasing and no

Move the Material for Car Repairs

hope whatever of effecting the permanent reduction so essential if the railroads are to wage a winning fight to catch up with the demands of the country.

Announcement of approvals of loans from the loan fund, which the Interstate Commerce Commission has available for equipment and other improvements and for maturities, have not been forthcoming as rapidly as it was perhaps generally expected that they would be. The recommendations of the Association of Railway Executives covered loans sufficient to finance the purchase of a total of 838 locomotives and 45,021 cars. Estimates of the *Railway Age* (July 9, page 57) showed that some 200 of these locomotives and 20,000 of the cars are still to be ordered. One of the reasons for the delay in the announcements is the fact that Director W. A. Colston of the Commission's Bureau of Finance has been trying, in so far as possible, to induce the carriers to borrow the money additional to the amount of the proceeds that may be received in loans from the fund at 6 or 7 per cent. In some cases where the carrier is able to rely on special conditions, such as the personal credit of one of its important backers, the money may be obtained at 7 or even 6 per cent. Other roads, however, find that they have to meet the market rate, which at present is $7\frac{1}{2}$ per cent, or higher. While Mr. Colston is to be commended for his desire to hold down the rate at which the railroads must borrow money, it is to be sincerely hoped that he will not carry his idea so far that it may postpone the purchase of the cars and locomotives that are so urgently needed. The loan fund is primarily intended to put the physical plant of the railroads back in proper condition. There will be delays enough in securing material and no time should be lost through delays in financing purchases.

"Bleeding the Public"

Under the headline "Large Shipping Interests Give Warning to Railroads," the Daily Iron Trade and Metal Market Report of July 14, contains an article in which it is stated that "more than one high railway executive has been told recently by certain large shipping interests that unless the railroads cease catering to labor and unless they 'stop bleeding the public' at the instance of organized labor the railroads will be fought tooth and nail in the future by shipping interests." The article continues, "The feeling among certain interests—and it is said to be growing—is that many railway executives have found it the path of least resistance to accede to labor's demands and promptly pass the bill along to the public." In the past, it is true, labor has wrung concessions from railroad managements, but from the time of the passage of the Adamson law until the termination of the two years of federal control, the influence of governmental regulation has been as largely responsible for the brotherhood's success as has the attitude of the carriers' executives. A review of railway history from the time of the passage of the Adamson law until 1920 will show that in a large majority of cases the railroads have had to make whatever concessions they have made. Under the terms of the Transportation Act any wage increase granted to employees, such as the \$620,000,000 increase awarded them by the Labor Board, must be paid out of the shippers' and consumers' pockets. The question which naturally arises, then, is, What was the attitude of the representatives of the railroads in this controversy? Throughout the testimony of the Conference Committee of Managers, which presented the car-

riers' case before the Board, opposed to unreasonable demands of the railway employees was expressed, masses of statistics and tables were presented to show that in many cases railway employees have been and are adequately paid, and in addition, the committee advocated strongly the establishment of different bases of pay, the use of which would scale employees' compensation according to the cost of living in the community in which he resided, and to the comparative value of his services. With the existing machinery for adjusting controversies between railroads and their employees, more than this could not have been done. The whole matter was aptly summed up by a shipper, who, after attending several of the hearings at which the Conference Committee presented testimony, said, "It seems to me as though the railroads are pulling the public's chestnuts out of the fire." With this brief analysis in mind it should also be remembered that although the public was a party to the dispute, almost no testimony specifically on its behalf was presented during the deliberations. Rather than condemnation, therefore, the railway executives should be given commendation for their stand upon this whole question of wages and working conditions. They did not oppose all advances in wages, but they did all they could to prevent unreasonable advances from being granted.

With every effort bent on increasing repair shop output in the next few months, it is important to bolster up individual departments, not forgetting the blacksmith shop.

Don't Forget the Blacksmith Shop

In some ways, the blacksmith shop has decreased in importance during the recent years because of the more general use of autogenous welding processes for repair work, and automatic turning machines for the manufacture from bar stock of many parts which were formerly forged. On the other hand, the increased use of drop hammers and forging machines with special formers and dies brings the blacksmith shop to the front as a production department. It is no longer merely an indirect aid to other departments and every effort should be made to secure necessary new equipment, at the same time using what is now available to the best possible advantage. Very often minor changes will effect a considerable increase in output. For example, poor ventilation and light cut down output and many shops are both poorly ventilated and poorly lighted. Early attention should be given to these matters and prompt action taken. The installation of swinging jib cranes at certain points previously overlooked may so facilitate the handling of heavy locomotive parts that two men can do six men's work. The question of proper arrangements for trucking, particularly, calls for attention and offers opportunities for speeding up the work. Owing to the need for light and air, blacksmith shops are usually isolated, and smooth, level runways should be provided to all departments for motor trucks. Many other details besides those mentioned should be attended to. With prompt action, the result will be more cars and locomotives repaired and available for service.

"Any one can get results with all the men and money wanted at his disposal, but what the railroads need are men who can get results with the means at hand," wrote a general manager to a division superintendent who had requested certain expenditures and additions to the pay roll. This is in fact the problem of the hour and the man who can make the utmost use of facilities at hand is the man of the hour. It applies to general managers as well as division superintend-

ents, to motive power and engineering executives as well as roundhouse and section foremen. If your locomotives are in active service an average of only six hours out of 24, the problem of strengthening your terminal organization and equipment to a point where locomotives can be maintained in service eight and ten hours of every day is manifestly of greater importance than the problem of financing the purchase of additional locomotives. If these locomotives are pulling 1,000-ton trains when the same engine modernized would pull 1,100 tons with less coal, the advisability of modernizing these engines in advance of buying new locomotives is obvious. The need for new cars is apparent, but if the available car supply can be augmented by accelerating repairs to existing bad orders, this is unquestionably the thing to do. Finally, an increase in car mileage to an average of 30 miles per day will accomplish more than all the new equipment that can possibly be built within the year. In short, the problem of the hour is to get the best effort out of every individual, the maximum work out of every serviceable locomotive and the maximum mileage and loading out of every existing car.

A quick, accurate inspection should await every locomotive at the end of the run. A correct diagnosis of the condition

At the End of the Run

of the engine is the only satisfactory basis upon which subsequent operations at the terminal can proceed. During the war it was usual to station some of the most skilled surgeons in the field, rather than in the base hospitals, for the purpose of examining the wounded immediately following an engagement. These surgeons performed no operation nor even dressed a wound, but hurried about the field making a quick, accurate inspection of each casualty and indicating on a tag with each man the character of the injury and the proper hospital to which the patient should be sent. Inspection of locomotives arriving at a terminal should be assigned to men who know and these inspectors should be accorded every facility. No new terminal project should be considered without suitable inspection pits and means should be afforded for the prompt transmittal of work reports to the office where the work on each locomotive can be scheduled. In larger terminals the task of inspecting locomotives and reporting defects not only calls for capable men, but for a capable organization, one that can go over the locomotives as rapidly as they arrive without neglecting a single detail. Consider how much unnecessary work may be occasioned in the roundhouse by a slip-shod preliminary inspection or how many engine failures may result from negligent inspection. How much longer can locomotives be maintained in service by detecting all the defects that do not appear on engineers' work reports in these days of pooled power? Engineers should be encouraged to submit a conscientious work report but the day has passed when these can be relied upon as a guide to terminal operations.

To the layman the latest figures on immigration are encouraging and tend to create an impression that the present shortage in unskilled labor is soon to be alleviated, but a study of the latest available figures on racial classification, which are more or less indicative of the present status of immigration and emigration as regards railway labor, brings out the need of some form of internal publicity to reduce the losses by emigration. For the last six months of 1919 the figures show that of the eight main races which are generally depended upon to furnish the unskilled track labor a total of

33,352 persons were admitted and 108,547 departed; the Italians forming the majority, with 29,927 admitted and 67,437 departing. A significant feature of this is that practically all who are leaving are able bodied men of the wage-earner class while about half of those admitted are women and children. This means that even though the number of immigrants and emigrants is equal the country is still losing twice as many men as are coming in. Reducing this to railway labor, it means that at the present time the roads are losing from three to four times as many men by emigration as they are gaining by immigration. This loss can be reduced by proper publicity, showing by word of mouth and by printed matter the hardships and disheartening troubles that the returning alien will encounter in his home country. The foreign born worker should be shown in a convincing manner that the "fabled" opportunities in his native land are truly fables and that in general the way of the home-visiting alien is hard, his countrymen usually regarding him in the light of a "profiteering slacker." In many instances such men of military age have been detained abroad by the military authorities while food and clothing have been difficult to secure, even at exceptionally high prices. These factors backed by a study of alien papers published both here and abroad and presented to the men in an understandable and authoritative manner will do much toward holding our present forces at their work.

The Improvement in Transportation Conditions

THE LARGE AMOUNT of news that has developed during the past few weeks regarding the efforts of the railroads, the Interstate Commerce Commission and the shippers to improve transportation conditions has tended to obscure, to a very considerable extent, the very material progress that has been made during that time. The complaints regarding unsatisfactory conditions and the news of the various plans adopted or discussed for the purpose of dealing with those conditions have naturally received more publicity than the results obtained, particularly since it takes a little time for the results to follow and even more for them to show up in the reports.

Reports received from the railroads by the Commission on Car Service regarding freight movement and car performance during July indicate that the railroads, with the co-operative assistance of the Interstate Commerce Commission and of many of the shippers have not only overcome to a large extent the effects of the strikes which occurred in April and which were renewed in many cities as late as June but that they have turned the corner and are beginning to show a commendable improvement.

The first effect of the strikes in April was shown in the accumulations of cars at terminals in excess of current movement which produced the congestion that has slowed up traffic ever since and has accentuated the car shortage. On March 1 when the railroads were returned they inherited a congestion resulting from the accumulations during the winter months amounting to about 100,000 cars but during March this was reduced to 93,000. After two weeks of the strikes which began in April the accumulations had reached the unprecedented total of 288,000. During the succeeding weeks this was gradually reduced to 105,000 but during the latter part of June the recurrence of the strike in several eastern terminals resulted in a further increase to 129,000 on July 2. By July 16 this had been again reduced to 92,700, or below the total before the strikes and during the week ending July 23 there was a further reduction to 85,839. There was a slight increase during the following week, at-

tributed mainly to violations of embargoes and inability of consignees to accept freight, but for the week ending July 30 the total was 90,571.

The large amount of congestion during the spring months naturally had the effect of reducing the available car supply and the deferred car requisitions, which represent the cars ordered by shippers for loading which they were unable to get promptly, increased from a daily average of about 80,000 during March to 130,000 for the last week in June, but by July 23 this had been reduced to 118,643 for the United States and Canada, or 112,093 for the United States alone, of which 34,045 were coal cars.

The clearing up of the congestion and the improvement in the car supply naturally go together. They have been accomplished in part by an improvement in the labor situation and also by the extraordinary efforts put forth under the direction of the local committees created by the Commission on Car Service and the Interstate Commerce Commission for dealing with the situation at the various important terminals.

The results in which every one is interested, however, are shown in the reports of the volume of freight handled by the railroads. These have regularly shown an improvement over the figures for 1919 except for about two weeks during which a large number of the yard employees were on strike, and for the four weeks ending July 24 there were loaded on the railroads of the United States, 3,437,235 cars of commercial freight as compared with 3,365,046 in the corresponding period of 1919 and 3,699,116 during the same weeks of 1918. In the four weeks ending June 26 the total was 3,405,500. For the eight weeks ending July 24 the totals have been 6,842,735 for 1920; 6,602,452 for 1919 and 7,529,634 for 1918.

During the week ending July 17 the number of commercial loads handled amounted to 923,968, only slightly below the maximum figures for 1918 and for two weeks the roads in the Southern region have handled more freight even than in 1918 when the South was experiencing the rush of traffic incident to the war.

At a meeting in New York on July 16 the Association of Railway Executives adopted resolutions covering a program to speed up car movement and increase car efficiency. This program calls for an average minimum car movement of 30 miles per day, a figure never yet attained in the history of American railroading. Reports showing the accomplishment since that meeting are, of course, not yet available but those received from most of the roads for the month of June show a very marked improvement over previous months and a large number of roads have already exceeded the 30-mile average. The character of the traffic and conditions of operation vary so on different roads that a wide variation in the figures between individual roads is to be expected and the results are best shown by comparisons with previous performance. During March the average miles per car per day for all roads was 23.4 as compared with 19 during March, 1919. For April the average was brought down by the effect of the strikes to 19.7, as compared with 19.9 in April, 1919. For May the average was 24.1 as compared with 20.1 last year. For June the reports received by the Commission on Car Service are not yet sufficiently complete to compile the average but many of the roads showed gains as compared with the previous year ranging from 1 to 16 miles.

The heaviest part of the year's traffic is still to come during the fall months and the great benefits expected to be derived from the rate decision can not be reflected in the addition of new equipment and facilities for this year, but the marked improvement being shown during the summer makes it possible to look forward to the fall season of heavy traffic with much less anxiety than was felt a few weeks ago.

Letters to the Editor

Information Wanted About Uniflow Engine

PHILADELPHIA, Pa.

TO THE EDITOR:

About the year 1900 I was informed that a locomotive had been built for the Lake Shore & Michigan Southern, now a part of the New York Central System, with a system of central exhaust ports like those now used on the type of engine known as the Uniflow Engine.

Within a year I have heard this engine referred to again, but have been unable so far to ascertain anything about it.

I should be very glad indeed if you would publish this letter and see whether it would bring out any information concerning the locomotive in question.

F. W. DEAN.

The C. P. R.-C. N. Controversy Over the Turtleford-Shellbrook Line

TORONTO, ONT.

TO THE EDITOR:

In the *Railway Age* of June 4, 1920, page 1566, there appeared an article entitled "Government versus Private Ownership" to which reference was made in an editorial. This article referred to the denial by the Railway Committee of the Dominion House of Commons of the application of the Canadian Pacific to build a railway from Saskatoon to Birch Lake. In both of these references the impression is created that there was discrimination in favour of the government-owned line, which is absolutely at variance with the facts:

Therefore, I should like to state the true situation:

Before the war, the Canadian Northern (prior to acquisition by the government) projected the line in question from Turtleford to Shellbrook, made the surveys, and obtained a charter to build. The war necessarily postponed actual construction. In 1919, the first season after the war, the Canadian National Railways, acting for the Canadian Northern, secured from Parliament the renewal, among others, of its charter for this line. Re-surveying having shown that the most feasible route was somewhat further south at the eastern end of the line, the government, early in 1920, was asked to amend the charter accordingly. In the 1920 estimates, provision for grading 22 miles east from Turtleford was made, the intention being to follow this in the coming season with track and further grading. In the meantime, in recognition of the principle that railway construction should be conserved, the railways came to an understanding that duplication of lines and existing facilities should be avoided.

The Canadian Pacific applied to Parliament for authority to construct six lines. Five of these applications were granted. The sixth application was for a line into the same territory as was to be served by the Canadian Northern's Turtleford-Shellbrook line. The C. P. R. admitted before the railway committee that no survey had been made by it on the ground, also that the topography of the country did not leave room for more than one line. At the hearing before the railway committee, it was shown that the C. P. R. would eventually have to build 100 miles north from the vicinity of Saskatoon to reach the territory requiring railway facilities, which would be tapped by about 35 miles of construction by the Canadian

National from Turtleford. The C. P. R.'s line would also involve, after 20 miles of construction, a costly and of necessity a slowly-constructed bridge across the North Saskatchewan river.

With these views before them, the railway committee of the House of Commons decided, and we think rightly, that the best interests of the community would be served, and served more quickly, by confirming the construction by the Canadian National and by rejecting the application of the Canadian Pacific. It was simply a question of expediency—of deciding what was best to be done under the circumstances, and the question of the change in ownership of the Canadian Northern, by which company the line had originally been laid out, did not affect the decision. The case was decided on its merits, and the question of government versus private management was not involved.

D. B. HANNA,

President, Canadian National Railways.

Compound Locomotives in France

HEATH, MASS.

TO THE EDITOR:

It has been stated that compounds will no longer be built in France because the fuel economy is offset by increased maintenance. From a close association with compounds on two French railways, I do not believe that the simple will supersede the compound, at any rate in passenger service. A good many simples no doubt will be built now in order to obtain locomotives at a lesser cost and in the minimum time. In 1911 when superheaters began to be extensively applied in France, a good many four-cylinder simples appeared, and it was said that no more compounds would be built. Tests showed, however, that superheating compounds was as advantageous as super-heating simples.

There are many reasons why the compound will probably continue to be successful in France. The enginemen receive coal premiums and experience has shown that they get relatively higher premiums with compounds than with simples. Therefore, compounds are popular with the crews. Every engineman has served two years as a machinist's helper. This is undoubtedly advantageous, especially where compounds are concerned. The four-cylinder balanced compound has been in use in France over 25 years so that every engineer is thoroughly familiar with the most economical points of cut-off for the high pressure and low pressure cylinders.

The maintenance question does not give much trouble for two reasons:

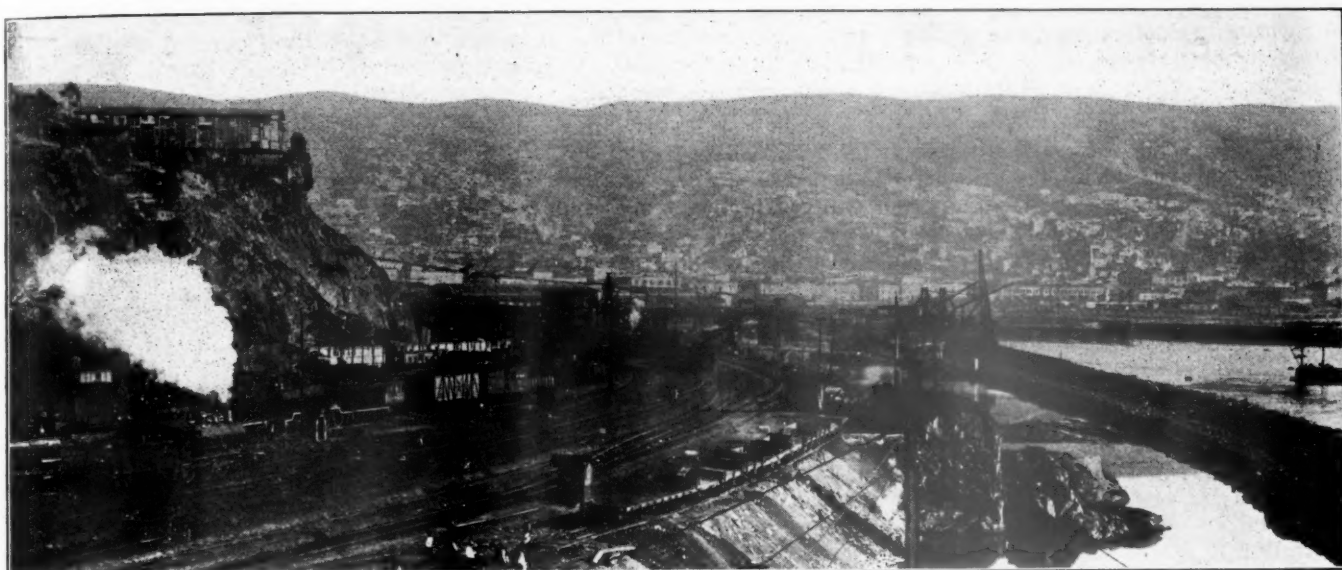
First, French engines are much more carefully finished in such matters as motion work, packing rings, brasses, etc.

Secondly, the oil allowance is very liberal, consequently long wear on cylinder packing and piston rod packing results.

Other reasons for the success of the compound are: (1) The limited axle load—17 tons is allowed with four-cylinder balanced engines but is reduced with two-cylinder engines to allow for dynamic increase. So if four cylinders are to be used, compounding may as well be employed as not. (2) The softer draft on the fire reduces spark losses especially with fine coal which is largely used. (3) The variable exhaust in extensive use permits the compound to be operated to its best advantage. (4) The compound can be operated at high capacity with long cut-offs with less drain on the boiler and less tearing of the fire.

In conclusion, compounding does not preclude feed water heating though the latter shows to better advantage on a simple engine.

W. G. LANDON.



Yards South of Valparaiso, Chilean State Railways

American Railway Supplies in South America

First Article of a Series by Railway Age's Correspondent Outlines
First Part of Trip Down West Coast

By John P. Risque

AN AMERICAN RAILROADER who has visited most of South America and has now returned to set down his observations for those who are intently studying the map of South America from the standpoint of constructing needed lines, or of selling materials to those under operation, admits of impressions as mixed as the variations in the scenery. In reflecting upon gages of from 2 ft. to 5½ ft., infinite varieties of rolling stock and as many different opinions on

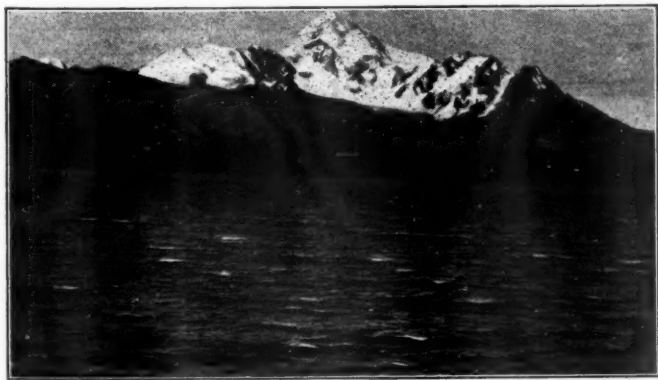
Colombia

Owing to the comparatively difficult penetration to the interior of Colombia via the unreliable Magdalena river, a capricious controller of traffic, that country's dozen short lines were not visited. A lack of time mitigated against the ascent of the river from the Port of Barranquilla to Bogota, the capital and chief city of that republic.

Ecuador

The descent from Panama, instead, counted its first stop at historic Guayaquil, where torn up streets and American steam rollers proclaimed the activities of the Rockefeller Commission in its effort to clean up the town. The work that is being done will eventually facilitate the visit of intending railroaders and others from America; and although the countries to the south still maintain a rigid quarantine against Ecuador, the hope for healthier times is amply expressed in the activities of the modernizers referred to. Thus, the first line visited was the 3-ft. 6-in. gage Guayaquil & Quinto Railway, an American enterprise, 287 miles long, traversing the mountainous territory between the two points.

This line is the first "marvel of engineering" encountered and is well worth the ride from tropical Guayaquil, on the banks of the Guayas river, to Quito, the capital, high up in the mountains in a land of eternal spring. As the whole lay-out on the Guayaquil & Quito is American, including the administration, descriptions of the equipment employed would bring forth nothing new. One should mention, however, that the locomotives, in order to clear the narrow cuts along the line, are limited in cylinder "overhang" and masquerade as once familiar Vaclain compounds. They are simple engines, however, whose cylinders are mounted one on top of the other. Modern accessories are finding their ways to the shops at Duran, five miles above Guayaquil on the opposite bank of the river. Worn



Lake Titicaca and the Peruvian Andes, a Part of the Main Route of the Southern Railway of Peru

operation, he feels like defining the systems as a whole as "scrambled." Yet he has returned an admirer of those in control and is willing to admit that their years of battles against opposition, jealousy, vacillating governments and the innumerable other handicaps that beset the transportation developer there, have brought forth systems that are successfully contending with uphill conditions that seem to exceed the temporary troubles of the railroaders in his own country.

locomotive flanges are being welded. Wood is the fuel used and whisperings of oil in those regions predict a possible change to that railroad life-saver, dependent upon the luck of the prospectors.

Peru

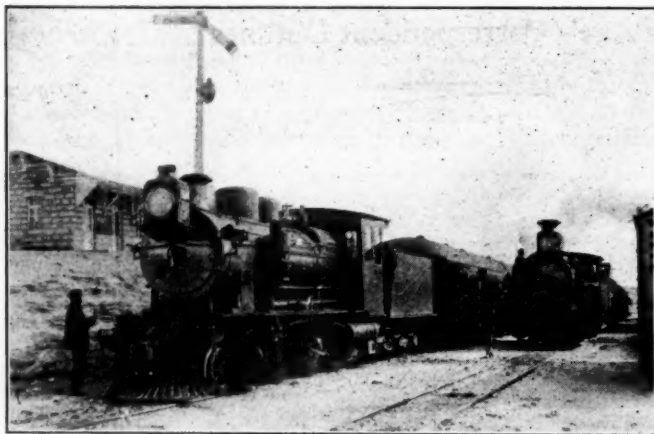
It is a long jump from Guayaquil to the railroads of Peru. The visitor should take passage to Callao, 725 miles south, the landing port for Lima, the political, commercial and geographical center of the Peruvians, and extend his observations from there north and south. The unrelated short lines in the north, between Lima and Eten, offer little attraction to the seller of railway goods. To the prospector or builder, however, there is possible interest. This group of lines for convenience can be referred to as the first group of Peruvian railways, most of which, like the roads described herein as the second and third groups, respectively, are operated by an English company, under a lease from the Peruvian government, under the name of the Peruvian corporation, whose holdings are all of standard gage.

The second group is formed by a line known as the Central of Peru, running from Callao to Lima, nine miles distant, thence 15,665 ft. straight-up, to the roof of the world, over a line known in its infancy as the Oroya Railway. This was the second "engineering marvel" encountered on the trip. Space does not permit a description of this ride, even if there were adequate words in the language with which to try to describe this remarkable ascent of $3\frac{1}{2}$

Pasco line joins the Central of Peru. It was stated in a previous paragraph that the railroads under discussion (with this exception) are controlled and operated by English capital. As the characteristics of the equipment and appearance of the right of way do not manifest such ownership, but on the contrary, due to a one-time preference for American rolling stock, lead one to believe that he is on an American railroad, it is pertinent to emphasize at this point that in a railroad sense the observer is as truly on



Llai-Llai Station on the Main Line of the Chilean State Railways Between Valparaiso and Santiago



Henschel (Germany) 2-6-0 Engine and Train, Southbound at Puguio's Station, Arica-La Paz Railway

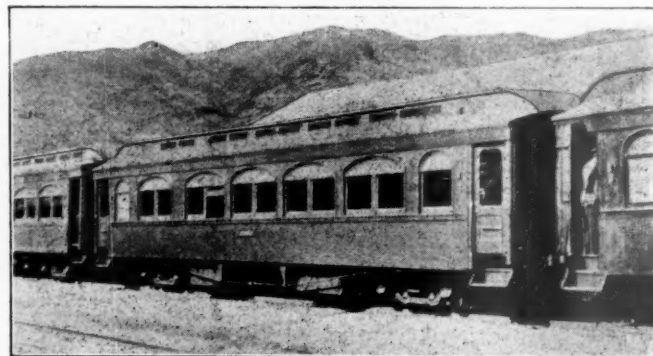
miles in a distance of 247 miles, over 21 switchbacks, 61 bridges and through 65 tunnels, all in $9\frac{1}{2}$ hours. The enthusiastic railroader from the north will less likely hesitate at the nominal price charged for the ride than he would at the tale of the friend who made the ascent in spite of the doctor's advice. Weak hearts are barred; even strong ones make their presence known by intense fluttering at the 12,000-ft. line, which, when safely passed, brings on no discomfiture aside from a temporary attack of "soroche" or mountain sickness, known far and wide in the Andes.

Witnessing the four-car train's climb to the top is a study in confidence and an all-day ordeal seldom forgotten. The railroader will observe that the length of the trains, therefore the tonnage, is limited by the lengths of the switchbacks, seemingly precluding possibilities of substituting big Mallets for the American-built Mikados and Consolidations used on the line. He sees here, as on the first and third divisions, American equipment throughout, with the exception of a few side tank suburban locomotives from Britain, used in the local run from Lima to Callao.

At Oroya, near the end of the line and but slightly below the summit, the American-owned, standard gage Cerro de

British soil as if he were in Britain. And although the genial gentleman who holds the office of general manager of the Central at the Desamparados station in Lima is an American, it is understood that his successor will be a Briton, as are all the rest of the officials, including the chief mechanical engineer, who corresponds to our own superintendent of motive power.

The third group or system, so designated in this article for convenience, is the most entertaining 535 miles of them all. To reach the Pacific coast terminal of the Southern of Peru, namely Mollendo, 480 miles south, it is again necessary to patronize the steamer. Briefly, this standard gage line, so full of interest to an American and reserved for a thorough description in a later article is, in every sense of the word,



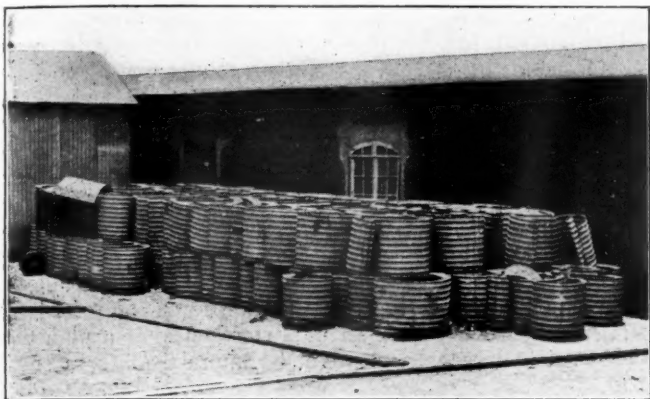
Typical Meter Gage Sleeping Car on the International Train, La Paz to Antofagasta

a real railroad; it is perhaps more than would ordinarily be expected of a railroad which has a line from sea level to 14,000 ft. above sea level, which is confronted with a transshipment of freight and passengers to steamers on Lake Titicaca, and which uses from there on a narrow gage line whose last division is an electrified six-mile line, descending into its terminal at La Paz, the capital and chief city of Bolivia.

The indulgence of the reader is asked if he is again re-

minded that he is, in the sense of this article, still on British soil, despite the American locomotives and cars which traverse it. The manager at Arequipa happens to be an American; but his staff is British throughout. A representative of the London directorate in checking up the 1920 status of the road inquired about "this predominance of American locomotives." He wanted to know why his freight

job. He will also find automatic couplers and Westinghouse air brakes, both rarities on a British road and evidence of a one-time interest in American materials. The principal money earner for the Antofagasta & Bolivia, aside from its well deserved passenger traffic, which is steady and large, is the haul of nitrate to the coast from the prolific fields along the lower end of the line.



Armco Iron Culvert Material at La Paz, Ready for Mountain Culverts

is not being hauled by British-built engines. Whereupon his adviser, a sub-official at Arequipa, is said to have diplomatically ventured as an excuse that "like Fords, they stand the racket."

Bolivia

Leaving La Paz, the traveler will presumably use the Antofagasta & Bolivia Railway. This line, despite its narrow gage, provides comfortable trains with dormitory sleeping cars and wonderful scenery, including live volcanoes,

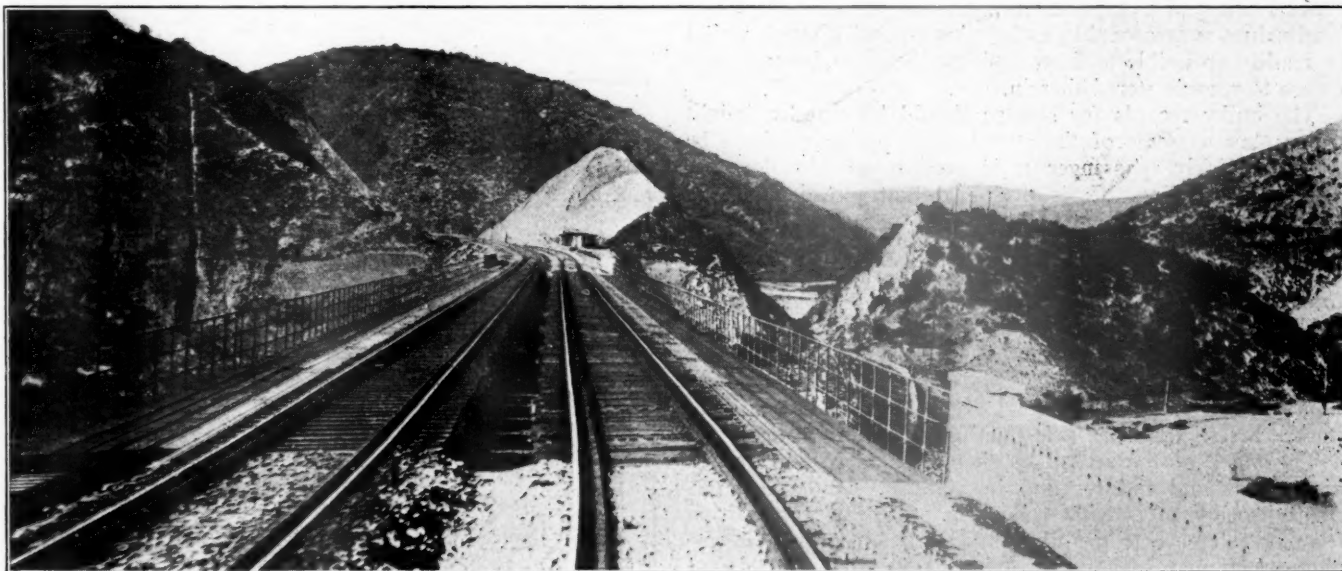
Chile

If the traveler is anxious to try the Chilean railroads, preferring not to wait for a ride on the Longitudinal from



North British Locomotive Works 4-6-0 Passenger Locomotive at Alameda Station, Santiago

Antofagasta south, he can descend to the Port of Arica on the meter gage Arica-La Paz Railway. This is the shortest link from La Paz to the coast and on its line is what is claimed to be the longest stretch of rack rail section in the world—28 miles. An investigation as to how the Southern of Peru, with 200 miles more haul and two extra trans-



Cucharas Viaduct on the Main Line of the Chilean State Railways Between Santiago and Valparaiso

as well as a diner that he can afterwards remember with no displeasure. Details of this likewise interesting line are also reserved for treatment in a subsequent article, with a brief mention here that the road's line from La Paz to Uyuni—about half-way to Antofagasta—is meter gage and the balance 2 ft. 6 in.

The traveler will observe American-style cars and a mixture of British and German locomotives, as well as a sprinkling of old and once popular American moguls, still on the

shipments of freight and passengers, can compete with this short line is interesting reading and is in preparation.

Once on Chilean soil, the investigator begins to realize that he is studying a market that, unlike its neighbors, is not predominately British. The Chilean railways are mostly government-owned. This results in the field being open for supply companies of all countries. The Chilean depends upon the markets of the world to supply him with the best and cheapest for his needs.

The Storage of Records

By F. H. Harvey

General Auditor, Pittsburgh & West Virginia

THE SYSTEM of preservation and destruction of railroad records in use on most lines is one which is conducted without regard to efficient business principles or scientific methods, and results in a vast amount of lost energy and innumerable difficulties which could be overcome by the application of such thought, intelligence and serious consideration as is applied to other branches of a carrier's business.

Generally, there is no central storage place, each office being allowed to handle the situation as best it can, or more properly speaking, as it chooses. This, usually, has been the plan for years and results in valuable records being destroyed, or lost by subordinate employees, and at the same time costly space is used in many instances for the storage of minor records. Any plan for the storage of records that does not provide for a general authority and a general storagehouse is not wholly efficient.

To correct this situation, I would suggest the establishment of a record storagehouse and the appointment of an officer known as the custodian of records.

It is proposed that this establishment should be the general storage place for the records of all departments and branches of the service, other than current ones. It would appear that the subject of the preservation and destruction of records is largely a legal matter, so that it would be logical to have the officer charged with the duty of preserving and destroying these records placed under the jurisdiction of the law department. Upon such an officer, where feasible, should rest the responsibility of preserving or destroying any records of the company.

The location of the record storagehouse is a problem requiring deep consideration. It should be convenient to the general offices of a corporation, preferably in a district where land values are reasonable, as in suburbs, and where it would be readily accessible to those desiring the more frequent reference to records stored therein.

The bulky records for storage should be sent by freight trains; but as some of the stored records may at times be wanted quickly, passenger train service would allow for prompt forwarding. It is presumed that records that are often referred to will not be sent to the record storagehouse. In these days of special statements, old records are frequently needed and the passenger train service would therefore prove useful.

The construction of the storagehouse should be fireproof and at the same time economical. Concrete and metal are the usual fireproof materials. Galvanized iron in some instances could be used to a great extent, with an iron framework. Electricity is the safest artificial lighting agency.

The office of the custodian should be large enough for his records and indexes and in addition should be sufficiently roomy to provide space for statistical compilation from or reference to the filed records by departmental employees. It may sometimes be considered advisable to send an employee for information instead of having the records returned to the original office.

The ledgers and more important records should be filed in the most secure part of the building.

The records should be filed by departments and offices. All station records should be kept in one part of the building, all shop records in another, etc.

In order to secure uniformity in holding records at various offices and in sending them to the storeroom, and also to release valuable space in the offices, a schedule should be made showing the periods the various records are to be

retained at the offices before being sent to the storeroom. In preparing this schedule consideration should be given to the use made of the record in the offices, only records that are live or often referred to being held locally for any considerable period. This schedule would enable the custodian of records to ascertain if any offices were holding records that should be in his custody.

The custodian of records should have a register of all records by offices, showing date and quantity received, period covered, location in storagehouse; and when destroyed or otherwise disposed of, a record thereof. He should have authority to inspect or search all file rooms and vaults in all offices. This is particularly important when he first gets his storehouse in working shape, as many old and valuable records are often found laying around at obscure points, sometimes retained as curiosities, and at other times lost sight of entirely. He should not only know what records he has in his storehouse but also the location of all other records on the railroads.

It is not intended to give particular forms of records or detailed construction of the record storehouse, as a plan that would suit a large system might be impractical for a small road.

The Interstate Commerce Commission has issued an order which reads, "That all accounts, records, and memoranda to be retained permanently or for specified periods of time, shall be filed in such manner as to render them easily accessible and convenient for examination." How many railroad officers know what records of their road, dated prior to July 1, 1907, are preserved and in what state of preservation they are?

It is possible, by the general storage system suggested, that better prices could be secured from the sale of old records it is decided to dispose of in that manner than by allowing various offices to sell this paper. In fact the sale of old paper should offset to a great extent the cost of operating the record storagehouse.



From the Altoona Times Tribune

The Public Pays the Bills

Labor Board Awards Express Employees \$30,000,000

Decision Grants Increases in Wages of 16 Cents Per Hour to
Approximately 75,000 Workers

AERICAN RAILWAY EXPRESS COMPANY employees, numbering approximately 75,000 members of the Brotherhood of Railway & Steamship Clerks, Freight Handlers, Express and Station Employees, the International Brotherhood of Teamsters, Chauffeurs, Stablemen and Helpers of America, the Railway Express Drivers, Chauffeurs and Conductors of Chicago and the Order of Railway Express Men were granted flat increases in wages of 16 cents per hour retroactive to May 1, 1920, by the United States Railroad Labor Board on August 10. It is estimated that the increases in wages provided for in the award will amount to approximately \$30,000,000 per year.

As in the case of the recent award affecting members of the railway brotherhoods, this decision does not dispose of the many questions involving rules and working conditions, some of which are interwoven with and materially affect the employee's earnings and wages. The general plan of the award follows that of the railway employee's decision throughout.

In announcing the decision, the board said in part:

"Immediately prior to July 1, 1918, practically all interstate express business in the United States was conducted by seven companies—the Adams Express Company, American Express Company, Wells-Fargo Express Company, Southern Express Company, Great Northern Express Company, Northern Express Company and Western Express Company. On July 1, 1918, an agreement was made between the United States Railroad Administration and the express companies named above providing for the consolidation and operation under government control during the war of the physical properties used in the express business of these companies. This consolidation still continued by mutual arrangement between the companies affected. The non-transportation activities, such as money orders, travelers' checks, etc., did not come and are not now under the consolidation.

"The new company, known as the American Railway Express Company, was employed as the sole agent of the government to conduct the express transportation business for the full period of federal control. Between July 1 and November 18, 1918, the company while acting as agent was not operated by or under the direction of the Railroad Administration. On November 18, 1918, the President by proclamation under his war powers took possession of the company and directed that the control and operation be exercised by and through the Director General of Railroads, one of the effects of which was to transfer all the general wage problems to the Railroad Administration acting through and under the advice and on the recommendation of the Board of Railroad Wages and Working Conditions.

"Various hearings were held and a study of the situation made as a result of which the Director General, on April 14, 1919, approved and promulgated an award known as Supplement No. 19 to General Order No. 27. This award provided, among other things, for an increase of \$25.00 per month to the rate of pay of each position, as of January 1, 1918. The wage provision applied to persons receiving less than \$250.00 per month and became effective January 1, 1919. Certain positions were not included, but were handled in other specific adjustments.

"Among these was the mechanical section of the express employees and it is to be noted, in this connection, that Decision No. 2 of this Board included certain express em-

ployees members of the shop crafts, who are therefore excluded from this decision.

"During the early part of the year 1919, the express employees parties to this dispute, through their organizations, submitted to the director general requests for further increases in rates of pay and changes in working conditions. In September, 1919, these requests were considered by the Board of Railroad Wages and Working Conditions, resulting in the issuance of an award known as Amendment No. 1 to Supplement No. 19. This award pertained to hours of service, overtime rules and relief period, but not to rates of pay.

"On February 25, 1920, at the suggestion of the director general, the company negotiated and executed a national agreement covering hours of service and working conditions of employment with the following organizations: Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees, and the International Brotherhood of Teamsters, Chauffeurs, Stablemen & Helpers of America. Later the provisions of this agreement were extended to and an identical agreement executed with the Order of Railway Expressmen.

"While Supplement No. 19 served somewhat to equalize salaries for persons performing the same work, there remained many inequalities which required attention, some of which were adjusted from time to time by the company with the approval of the Railroad Administration. The Board is informed that other adjustments for the purpose of equalizing inequalities have also been made by the Company since termination of federal control. Such adjustments are recognized in this decision.

"At the suggestion of the President, requests for increases in wages and for changes in working conditions submitted to the Director General in February were the subject of conference between representatives of the carrier and of the organizations concerned. This conference extended from March 10 to April 1, 1920, but resulted in complete failure to agree.

"As in the case of the railroad employees, this long delay and succession of disappointments, coupled with the pressure of a further rise in living costs, produced deep and not unreasonable dissatisfaction on the part of express employees, even to a greater degree than upon many of the railroad employees, as the wages paid to the express employees were generally less than those paid for analogous service by the railroads and in any other industries. The express employees thus felt themselves called upon to make sacrifices, as they believed far beyond those of any other class. For these reasons, and as a measure of justice, it was decided that this decision when made, would be effective as of May 1, 1920, and that the increases herein specified should be slightly in excess of those decided upon for railroad employees performing similar service.

"There are in the dispute as presented questions involving rules and working conditions, some of which are interwoven with and materially affect earnings and wages. Adequate investigation and consideration of these questions would demand time. Existing conditions required that the board should make as early decision of the wage question as practicable. For that reason, it has been necessary—and both parties to the controversy have indicated it to be their judgment and wish—that the board should separate the questions involving rules and working conditions from the wage

questions. Accordingly, the board has not undertaken herein to consider or change the rules and agreements now existing or in force by the authority of the United States Railroad Administration or otherwise and this decision will be so understood and applied.

"The board assumes as the basis of this decision the continuance in full force and effect of the existing rules, working conditions and agreements, and pending the further consideration and determination of the questions pertaining to the continuation or modification of such rules, conditions and agreements no changes therein shall be made except by agreement between the carrier and employees concerned. As to all questions with reference to the continuation or modification of such rules, working conditions and agreements, further hearings, if desired, will be had at the earliest practicable date and decision thereon will be rendered as soon as adequate consideration can be given.

"Having heard and carefully considered the evidence presented, the board hereby decides that the rate increases set out below constitute for the positions specified, a just and reasonable wage.

The articles of the award follow:

Article I.—Carriers Affected

American Railway Express Company.

Article II.—Increase in Wages

For each of the hereinafter named classes, add the following amounts per hour to the rates of pay in effect 12:01 a. m. March 1, 1920; provided, that increases in rates of pay made since March 1, 1920, where such increases were made for the purpose of adjusting inequalities, will be preserved and the increases herein established added thereto:

- Sec. 1. Agents, storekeepers, assistant storekeepers, chief clerks, foremen, sub-foremen, and other supervisory forces16 cents
- Sec. 2. Clerks16 cents
- Sec. 3. Wagon, automobile, stable, garage, and platform service employees16 cents
- Sec. 4. Messengers and helpers, messengers handling baggage and helpers, guards and other train service employees16 cents
- Sec. 5. All other employees, except those coming under the provisions of the agreement between the United States Railroad Administration and the Federated Shop Crafts, dated September 20, 1919.....16 cents

Article III.—General Application

Sec. 1. The increases in wages hereby established shall be effective as of May 1, 1920, and are to be paid according to the time served to all who were then in the carrier's service and remained therein, or who have since come into such service and remained therein.

Sec. 2. Increases in wages specified in this decision are to be added to the daily, weekly or monthly rates, as the case may be, in the following manner:

- (a) For employees paid by the day, add eight (8) times the hourly increase established to the daily rate.
- (b) For employees paid by the week, add forty-eight (48) times the hourly increase established to the weekly rate.
- (c) For employees paid by the month (except train service employees), add two hundred and four (204) times the hourly increase established to the monthly rate.
- (d) For train service employees paid by the month, add two hundred and forty (240) times the hourly increase established to the monthly rate.

Sec. 3. Payment made to employees on and after September 1, 1920, shall include therein the increases in wages hereby established.

Sec. 4. The amounts due in back pay from May 1, 1920, to August 31, 1920, inclusive, in accordance with the provisions of this decision, will be computed and payment made to the employees separately from the regular monthly, semi-monthly or

weekly payments, so that employees will know the exact amount of their back payments.

Recognizing the clerical work necessary to make these computations for back pay and the probable delay before the entire period can be covered, each month, beginning with May, 1920, shall be computed as soon as practicable and, as soon as completed, payment shall be made.

Sec. 5. The increases in wages hereby established shall be incorporated in and become a part of existing agreements or schedules.

Sec. 6. Except as specifically modified herein, the rules regulating payment of overtime or working conditions in all branches of service, and the established and accepted methods of computing time and compensation thereunder, shall remain in effect until or unless changed in the manner provided by the Transportation Act.

Sec. 7. It is not intended in this decision to include or fix rates for any officials of the carrier except that class designated in the Transportation Act as "Subordinate Officials," and who are included in the Act as within the jurisdiction of this Board. The Act provides that the term "Subordinate Officials" includes officials of carriers of such class or rank as the Interstate Commerce Commission shall designate by regulation duly formulated and issued. Hence, whenever in this decision words are used, such as "Agents," "Foremen," etc., which may apply to officials, such words are intended to apply to only such classes of subordinate officials as are now or may hereafter be defined and classified by the Interstate Commerce Commission as such subordinate officials.

Article IV.—Interpretation of This Decision

Sec. 1. Should a dispute arise between the management and the employees of the carrier as to the meaning or intent of this decision, which cannot be decided in conference between the parties directly interested, such dispute shall be referred to the United States Railroad Labor Board in the manner provided by the Transportation Act.

Sec. 2. All such disputes shall be presented in a concrete, joint signed statement setting forth: (1) the article of this decision involved, (2) the facts of the case, (3) the position of the employees, and (4) the position of the management thereon. Where supporting documentary evidence is used it shall be attached in the form of exhibits.

Sec. 3. Such presentations shall be transmitted to the secretary of the United States Railroad Labor Board, who shall place same before the Board for final disposition.

Although the award is considerably below the demands made by the various unions affected—calling for increases ranging from \$35 to \$51 monthly—it is believed that the men will except it. The leaders of the four unions involved met in Chicago immediately after the award was announced. Their decision will be submitted to the membership in the form of a recommendation for acceptance or rejection. A referendum will then be taken on the question by the rank and file.

The leaders of the expressmen's organization voted on August 10 to accept the award of the Railway Labor Board. The acceptance was in the form of two resolutions adopted at a meeting held by representatives of all the organizations affected. While there was some dissatisfaction expressed by the rank and file of workers, their leaders stated that the award in general is satisfactory and that a referendum on its acceptance is not necessary.

The Supreme Court of New York, Justice H. J. Hinman, has denied the petition of the Public Service Commission, second district, for an order requiring the New York Central to file, before August 10, a new tariff showing fares between Albany and Buffalo reduced to two cents a mile. Judge Hinman holds that the two-cent rate statute will not be revived automatically on September 1, when the control of the Federal law ceases. This decision is contrary to that recently handed down by the United States Court, in which the restoration of fares to the low rates prevailing before Government control was favored.

The Relation of the Railroads to the Coal Problem*

Present and Future Fuel Shortage Is Due Primarily to Conditions Within the Mining Industry

THERE HAVE BEEN for a long time complaints that the railways have been failing to handle satisfactorily the traffic which the industries of the country have been offering to them, and indeed failing to handle some of it at all. Complaints regarding their failure to handle all the coal traffic offered have been especially loud and insistent. For some years coal mine operators, and others interested in the coal industry, have been attacking the managements of the railways upon the ground that their failure to handle the coal offered to them has been due to inefficient operation. The National Coal Association, the principal organization of the bituminous operators, constantly assailed the managements of the railroads in 1917 because of the inadequate car supply furnished to the mines, and by the propaganda carried on by them in that year the coal operators did more to force government operation of the railroads on the country than any other class of business men. After government control was adopted they continued to attack the operation of the railroads under the Railroad Administration upon similar grounds. Since the railways were returned to private operation on March 1 they have renewed their attacks upon the private managements.

When it can be shown that the concerns in an industry have increased by 45 per cent the amount of service rendered by them during a time when there has been an increase in their facilities of less than 5 per cent, I do not believe it is fair to conclude that their failure to handle satisfactorily all the business offered is due mainly to inefficiency of operation. I think it would be more just to concede that they had been efficiently operated, and that their inability to handle satisfactorily all the business offered had been due mainly to the fact that their business had increased out of all proportion to the increase in their facilities.

Have the Railways "Broken Down"?

There seems to be a general impression that the railways within recent months, and especially since they were returned to private operation on March 1, have been seriously "falling down" and that the amount of traffic handled has been substantially less than in past years. What are the facts about this? Statistics of the Interstate Commerce Commission show that in March, the first month after the railways were returned to private operation, they moved 30 per cent more freight than in March, 1919, and more than ever was transported in any March in history. At the end of March there began a series of "outlaw" railroad strikes which for some months seriously interfered with the normal operation of the railways. The private managements of the railroads were not responsible for these "outlaw" strikes. They were a result of the delay and final failure of the government's Railroad Administration to settle controversies which arose between it and the railway employees long before the railways were returned to private operation. Nevertheless, in spite of the strikes the railways in the first five months of 1920 handled 20 per cent more freight than in the same months of 1919, and about the same as in the same months of 1918.

But it may be said at least the railways recently have been very inefficient in the handling of coal and, as a result, the

country is today confronted with a serious coal shortage. I may surprise you by saying that I challenge as unfounded the statements which have emanated from many sources to the effect that failure of the railways to move coal is mainly responsible for the present and prospective coal shortage. I am going to present to you some facts which I believe demonstrate that the coal shortage is mainly attributable to other things than the railroad situation.

Railroads Not Mainly Responsible for Coal Shortage

The causes of the present coal crisis date back to the early part of the year 1919. During the first four months of that year there was a large surplus of coal cars. The railways carried on vigorous agitation to secure a larger production and transportation of coal, but consumers and dealers would not buy it in normal amounts. Consequently, the operators would not or could not produce it, and the country's available supplies were not increased as they should have been. After the middle of the year 1919 the demand for and production of coal increased, and the railways handled the business so well that there was no coal shortage in 1919. In the four weeks ending on October 25, 1919, the average amount of coal produced and transported weekly had risen, according to the reports of the United States Geological Survey, to 12,089,000 tons.

In November, 1919, however, there came the strike of miners which shut down most of the bituminous mines. Owing to the small production in the spring of 1919 the country's stored supplies were below normal. The railroads were in no measure responsible for this. And what was the effect of the coal strike? This is a point of the utmost importance in relation to the present situation. The facts are clearly set forth in the reports of the Geological Survey. The normal production of coal at the time the coal strike came, as estimated by the Geological Survey on the basis of the amount actually produced and transported during the four weeks just before it began, was 12,089,000 tons a week. The effects produced by the coal strike, as shown by the Geological Survey's figures, were as follows:

Week ending	Normal production	Percentage of actual to normal production	Actual production
November 8.....	12,089,000 tons	29.6	3,582,000 tons
November 15.....	12,089,000 tons	33.3	4,024,000 tons
November 22.....	12,089,000 tons	44.3	5,344,000 tons
November 29.....	12,089,000 tons	44.0	5,334,000 tons
December 6.....	12,089,000 tons	43.5	5,245,000 tons
December 13.....	12,089,000 tons	48.0	5,800,000 tons
December 20.....	12,089,000 tons	86.9	10,501,000 tons
	84,623,000 tons	47.8	39,830,000 tons

It follows that the direct result of the coal strike was that at the beginning of the year 1920 there were immediately available in the country almost 45,000,000 tons less coal than there would have been if it had not occurred. In the entire year 1919, the reduction in the production of coal as compared with 1918, due almost entirely to causes for which the railways were not responsible, was 121,000,000 tons. In consequence, the country entered the year 1920 with a serious coal shortage.

Other Conditions Created by Miners' Strike

There was another important condition the coal mine strike created. Bituminous production during the strike was continued in only a comparatively few mines located chiefly in West Virginia. It was necessary to concentrate on trans-

*Abstract of an address delivered by Samuel O. Dunn, editor of the Railway Age, before the Illinois and Wisconsin Retail Coal Dealers Association at Milwaukee, Wis., on August 5, 1920.

portation from these mines and to send cars all over the country regardless of their ownership. The coal cars of the railways were thus scattered everywhere, which, on the resumption of the general operation of the mines, was certain to make it impossible for months for the railways to move coal in a normal manner. With a coal shortage and the demoralized transportation conditions due to the coal strike confronting them at the beginning of this year, the railways began a strenuous effort which has been continued up to the present time to replenish the country's coal supply. In spite of all the difficulties under which they were working, the railways between January 1 and April 10 moved 140,600,000 tons of bituminous coal. This was 29,400,000 more tons than had been produced and transported in the corresponding period of 1919, it was 900,000 tons more than in 1918 and only 1,850,000 tons less than the highest record ever made up to that date, which was in 1917. Up to this time it looked as if the railways were going to be able to haul enough coal entirely to offset the shortage which existed on January 1, owing to causes for which they were in no degree responsible.

At this time, however, the railways began to have labor troubles of their own. The "outlaw" railway strikes began in April. In consequence, in the week ending April 17 there was a sharp increase in the shortage of cars at the mines and a sharp decrease of coal production. The railway strikes have continued sporadically and intermittently almost ever since. In spite of them, however, the railways up to July 24 had moved 283,000,000 tons of bituminous coal. This was 45,000,000 tons more than was produced and transported in the corresponding period of the year 1919. It was only about 31,000,000 tons less than had been transported in 1918 during the same period, and the record of 1918 up to July 17 was the highest record ever established.

Coal Shortage Is Due to Reduction of Production

The foregoing facts demonstrate that the present coal situation is not mainly due to the failure of the railways to move the coal. It is due to the reduction of production in 1919, and especially to the loss of 45,000,000 tons of production in November and December because of the coal strike. If the coal which was lost to production by the strike in the mines in November and December were now available the country would not have had any coal shortage or be confronted with the prospect of one.

Since the railways have moved an enormously greater tonnage of coal than they did in the same period of last year, and since nevertheless certain sections of the country, especially the Northwest, are confronted with real danger of a fuel famine, the question naturally arises as to whether there has not been something in the distribution of the coal actually transported which has contributed to the present situation. Why, especially, is there an acute shortage of coal in the Northwest? The following statistics partially answer the question:

	First five months of 1919	First five months of 1920	Decrease
Coal shipped to head of lakes	5,000,000 tons	1,650,000 tons	3,350,000 tons
Coal exported, including Canada	1,706,000 tons	5,796,000 tons	4,090,000 tons

It will be seen that in the first five months of this year when the total coal transported was almost 37,000,000 tons more than last year, there was a decline of 3,350,000 tons in the coal moved to the head of the lakes, compared with last year, while there was an increase of 4,090,000 tons in the number of tons exported.

True Relation of Railroads to Coal Industry

Do I mean to give the impression that the railways have handled and are able to handle all the coal that the welfare of the country demands? By no means. While the present

acute coal situation is not chiefly due to inadequacy of railway facilities, it is partly due to it. The railways with existing facilities can transport substantially 12,000,000 tons a week, or about 625,000,000 tons a year, provided the transportation of coal can be kept uniformly at its practicable maximum throughout the year. But the country needs this much or more coal. In consequence, anything such as a strike in the mines, or the recent "outlaw" railroad strikes, that interferes with the railways moving in every week of the year practically the maximum amount of coal experience shows they are capable of moving causes the country to fail to get as much coal as it needs.

The total capacity of the bituminous mines, as rated by the Geological Survey, is about 18,000,000 tons a week. I do not know whether a market, both domestic and export, for this amount of coal could be found at prices which would justify the operators in producing it. Of one thing, however, I am sure, and that is, that the railways with their existing facilities, even when working to capacity, cannot transport more than about two-thirds this much coal and handle equally well the country's other traffic. If they should move more than this much coal it would be done by devoting a disproportionately large part of the railways' tracks, locomotives, cars and terminals to the transportation of coal. It follows that unless the railways are to discriminate unfairly in favor of shippers of coal they cannot handle anywhere near all the coal the mines can now produce without a very great enlargement of their facilities.



"And Gosh, How They Dread It!"

No Immediate Necessity for Substitute Crossties

Committee Report to American Railroad Association Contains Pertinent Conclusions

WHAT IS PROBABLY the most authoritative and conclusive statement ever prepared on the merits of and the present necessity for the substitute tie is found in a report of the Tie committee of the American Railroad Association which has just been made public by its appearance in Bulletin No. 227 of the American Railway Engineering Association. The most important fact brought out in this report is that there is no immediate need for a substitute cross tie although the committee urges the roads to undertake serious study of this subject. A large amount of information is presented on the present progress of the substitute tie which will be found of direct interest to railway officers and which will also serve as a valuable guide to any one who believes that he can solve the crosstie problem by the introduction of some substitute.

While the committee was instructed to report on "metal versus wooden ties," it assumed that a comprehensive report on the subject of substitute ties was desired. It did not, therefore, limit its studies to metal ties but included concrete, composite and other substitutes. The committee summarizes its conclusions as follows:

For many years efforts have been made to introduce substitute ties, the first ties being made of metal, then of concrete, and finally of combinations of steel, wood and concrete. In Europe steel ties were introduced very early and a few types were rather extensively tried. However, relatively, the substitute tie has only had a limited use and where it has been used to more than a limited extent it has been under special conditions. For instance, the more extensive use in Germany was due to a desire to provide a market for the surplus product of the steel mills. The wheel loads and traffic conditions on European roads are such that results obtained are no criterion as to what would be secured under American traffic, and it is safe to conclude that, while much may be learned from European experience, no substitute tie has been developed there which would promise success in this country.

The first trial of substitute ties in the United States, of which the committee has knowledge, was made in 1878. Since that time a large number of types have been tried, the majority of which have been tested only in small quantities. Many of these, especially in recent years, seem to have been designed by persons having slight knowledge of the fundamental requirements and were evidently put in track at the solicitation of the inventor rather than because of any serious purpose on the part of the railroad to develop a practical substitute.

The only substitute that has been manufactured on a commercial scale, and used extensively, is the I-beam section steel tie of the Carnegie Steel Company. Approximately 1,250,000 of these have been put in steam railway track, of which approximately 1,200,000 have been used on roads affiliated with the United States Steel Corporation, notably on the Bessemer & Lake Erie which has purchased 1,142,000 steel ties of this kind.

There are several designs, especially of the composite type, that is, of steel and concrete, and steel and wood, which promise to develop into successful substitutes, but their use has been so limited that definite conclusions cannot be drawn at this time.

The results obtained with the steel I-beam tie up to the present are covered in the following statements:

(a) The steel I-beam tie has proved to be a practical substitute for the wood tie on non-insulated track under heavy and dense traffic.

(b) Line, surface, and gage have been maintained on such track at reasonable expense.

(c) No satisfactory method of insulating the I-beam tie has been developed.

(d) Corrosion is a serious factor in limiting the life of the tie, and means of protection should be provided.

(e) Because of the lack of definite information as to the average life of steel ties, sufficient data are not available to make satisfactory comparisons of annual cost as between steel ties and wooden ties.

This committee is of the opinion that a substitute tie should be developed for the following reasons:

(a) The probability is that the cost of wooden ties will continue to increase. Sufficient timber for ties is available at the present time and it is possible that, with the more extended use of preservatives, better means of protecting the tie from mechanical wear, and by reforestation, the railroads can obtain their requirements indefinitely. It is believed that it will simply be a question of price as to whether the timber available is converted into ties or whether substitute ties are used instead. As it is probable that a satisfactory substitute tie will be the result of progressive development, rather than instantaneous design, and that such development will require a considerable period of years, during which time the supply of timber will probably decrease, the railroads should take a more active part in the design and development of substitute ties.

(b) Efforts to lower the cost of maintaining track by reducing the amount of labor required.

Conclusions

1. No substitute tie has as yet been developed which can be recommended for general use on high speed insulated track.

2. The development of substitute ties should be taken up by the railroads with a view of conserving the available timber supply—of producing a track structure of longer life—which may be maintained with less labor.

3. Any statements made to urge the introduction of a substitute tie on the claim that safe track cannot be maintained with wooden ties, such as will be available for some time to come, are without foundation and are contrary to the facts.

History of Substitute Ties

A history of the substitute tie containing an extensive bibliography and a summarized table showing the service which such ties have had in railway tracks in this country and elsewhere since 1849 is contained in Appendix A of the committee's report. The committee's statement includes the following:

The fact that no substitute tie has yet been developed which can compete, under ordinary conditions, on the total annual cost basis, with wooden ties has tended to make the whole subject of little more than academic interest to railroad managers. This attitude is no doubt partly due to the fact that a number of substitute ties have been handled by promoters in such a way as to at least give good reason for the idea that the companies backing them are more interested in selling stock than ties. It has been the experience that

a number of substitute ties while under trial for the first 6 or 8 years have given great promise of meeting the requirements, and have been very highly spoken of by those interested in them, only to fail and require complete removal from the track in less than 10 or 12 years, or in less than the average life of properly treated wooden ties.

Timber Resources

A concise summary of the present timber resources of the United States with particular reference to the bearing on the use of wooden crossties by the railroads is contained in Appendix C to the report.

The standing timber in the United States totals 3,000 billion board feet. It is being cut at the rate of 100 billion board feet per year. It is growing at the rate of 35 billion board feet per year. It is being destroyed by fire, insects, decay and waste at the rate of 35 billion board feet per year. Thus the growth and the destruction counterbalance each other. Therefore, 30 years is the extent of the supply, if the assumption is maintained that consumption will continue at the rate of 100 billion and destruction at the rate of 35 billion. The decline in the consumption of sawed lumber from 45 to 35 billion during the past 15 years is a permanent tendency marking the usual industrial development from free, wasteful use of a plentiful, cheap commodity to a conservative utilization as that commodity increases in value through being less available. Consequently, less than 100 billion board feet will be used in the future. The unaided natural growth of 35 billion board feet will be increased because forest products will become worth the cost of growing them. The destruction by fire will be reduced from the present 10 billion board feet because the consequent financial loss will not be tolerated. These factors will make the present supply and the new growth last at least 50 years.

Crossties constitute less than 5 billion board feet per year of the United States forest consumption. They can be made from every kind of tree represented in the estimates of standing timber. Consequently, wood for crossties will be available as long as it can be purchased. Since woods of certain kinds and sizes will not be available in satisfactory quantities and qualities for certain other purposes before they cease to be unavailable for crossties, it is a safe assumption that wooden crossties can be had for well over 50 years.

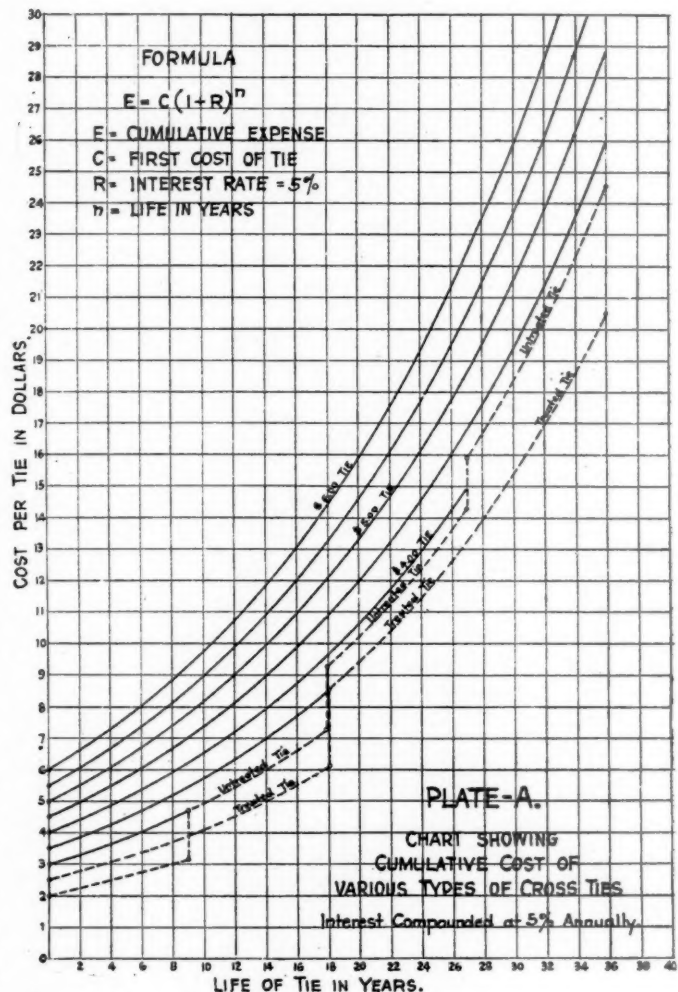
Fortunately, wood has been chemically treated so as to enable it to last longer than it has been possible to protect it from mechanical destruction, which is now the limiting feature of treated tie life. The protection against mechanical wear has contributed considerably to the average life of untreated ties. The further development of this protection will add additional life to treated ties. This makes of every piece of woodland in the country a potential source of tie supply, which fact means a practically universal distribution of this essential part of railroad track structure.

The untreated ties put in the tracks of United States railroads average about 7 or 8 years in service. Under methods of treatment and protection now in use, these ties will give about 15 years' service. If the 100 million untreated ties used per year were thus conserved, the lessened consumption of 2 billion board feet of timber annually would contribute appreciably to reducing the drain on the forest resources of this country. It is evident that instead of concerning themselves over the supply of ties, the railroads through wise handling should conserve those they use.

Some Fundamentals Regarding Substitute Tie Design

The Tie Committee, in its investigation of various substitute ties, has been impressed with the fact that many of them violate fundamental principles of track construction or maintenance, and it is with a view of pointing out some of those features that this appendix is added to the report.

The experience with substitute ties, so far recorded, indicates the following as being productive of failure: (1) Lack of efficient protection against corrosion; (2) Failure of rail fastenings; (3) Failure of insulation; (4) Loss of beam strength due to weakening tie in vicinity of rail to accommodate rail fastening features; (5) Use of sharp interior angles or square holes, from which cracks are developed; (6) Lack of protection against derailed wheels; (7) Design of base of tie such as to render tamping difficult or impos-



sible and such as to make maintenance of proper surface of track impracticable; (8) Design of tie such that track will not hold line, or such as to make lining of track impracticable; (9) Lack of beam strength causing breakage on yielding roadbed; (10) Lack of protection from abrasion from ballast in concrete ties.

It is believed that any track supported on ties will not remain permanently to gage, surface and line and that the labor operations necessary to restore it to gage, surface and line will have to be performed with more or less frequency. Therefore, any substitute tie should be designed as far as practicable to: (a) Resist the forces tending to disturb gage, surface and line, and (b) Lend itself readily to the labor operations necessary to restore the track to its original position.

It is recognized that no tie can completely meet these requirements and that the most that can be expected is a compromise.

Gage—The fastenings, in addition to being of sufficient strength to resist the stresses produced by traffic, should be of such design that without taking the tie from the track

and without change to the holes or fixed bolts or projections in the tie, a reasonable change of width of base of rail or variation of gage may be made. The fastenings should provide a freeway between the base of rail and lip of the fastening.

If the tie is so designed that it has essentially one support under each rail united by a transverse member to hold gage, this transverse piece must be of sufficient strength to maintain gage under all conditions.

Surface—The tie should have sufficient strength as a beam to support the loads imposed without undue deflection, so that the load may be distributed properly over the tamped bed.

The shape of the base of the tie must be such that it will not cut into or destroy the tamped bed. And further, it must be possible readily to tamp the ballast under the tie.

Line—The tie should be of such shape that it will not only resist the tendency of track to get out of line, but also permit the track to be thrown back to line.

Ties clamped in pairs or which enclose considerable amounts of ballast between their several parts to such extent that the ballast must be removed before the track is

In addition to the above the following features should be provided for:

(c) Insulation or the possibility of insulation without a material change in the tie proper should be provided.

(d) The fastenings should be such as to offer as little obstruction to derailed wheels as possible. They should permit the changing of a defective rail or the renewal of rails with ease, and should be of such character that they can be replaced if broken or defective without disturbing the tie.

(e) The tie should be of such design as to be able to stand a reasonable amount of punishment from the derailment of cars.

Relative Costs

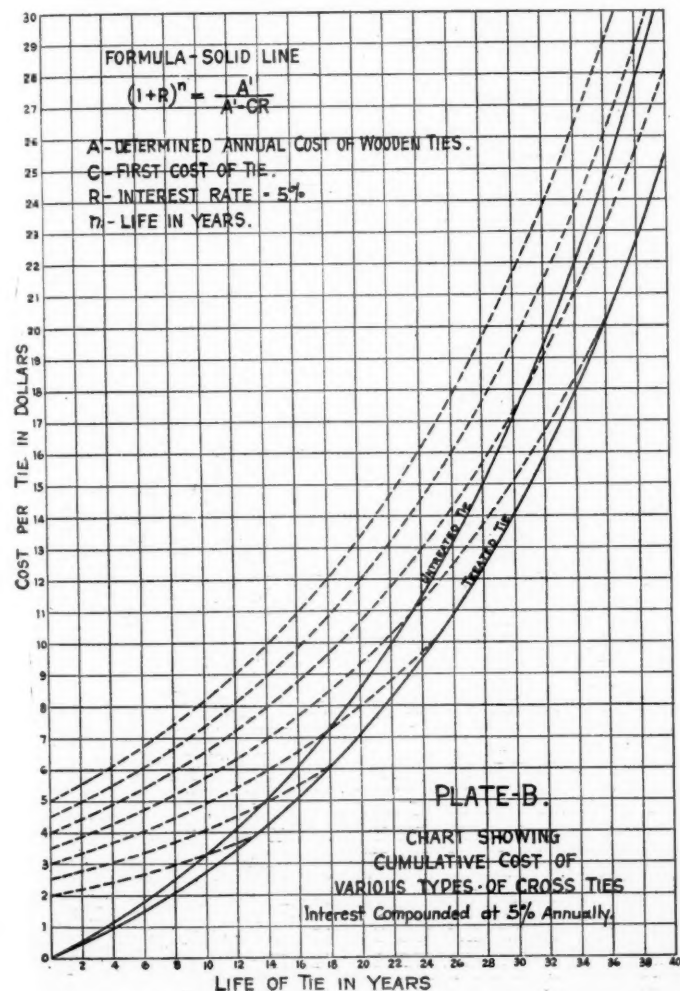
A preliminary survey of available data at once indicates that there is very little information as to the present day cost of substitute ties.

Therefore, it has been found necessary, in preparing the diagrams, first to establish cost curves of wood ties over a period of years, assuming a certain average life for untreated ties and another for treated ties. The various items of cost entering into these curves are merely assumed for the purpose of illustration.

Inasmuch as known costs of substitute ties are unavailable, a comparison has been made by using a unit cost in place as compared to wood ties in place. No effort has been made to show the comparative effect of the cost of maintaining track where substitute ties are used as against wood ties under similar conditions.

Plate "A" shows the actual expenditures for any given period, the untreated tie, with life of 9 years; the treated tie, with life of 18 years; and substitute ties, ranging in first cost from \$3 to \$6, by 50 cent intervals with indefinite life; the curves being carried out to 36 years. The chart is made up on a basis of 5 per cent interest, compounded annually.

In Plate "B" the curves for substitute ties are the same as Plate "A," and are shown in dotted lines. Curves for treated and untreated wood ties (solid lines) show annuity value rather than actual expenditure at any given period. These curves are calculated from expenditures at renewal periods as determined on Plate "A." Plate "B" will thus show that a substitute tie, having a certain unit cost in place, must last a certain number of years to become as economical as a good tie, for example—a substitute tie costing \$3.50 in place must last at least 23 years and 4 months to be as economical as an untreated wood tie costing \$2 in place with 9 years' life, and must last 35 years to compare with a treated tie costing \$2.50 in place and having 18 years' life.



lined, would add a material burden to the labor necessary to line track.

Projections on the base of the tie that project into the ballast would make necessary throwing the track out of surface before it can be lined. Such a design would so interfere with lining the track as to make it impossible.

The end of the tie should be of such shape that the ballast beyond the end would offer resistance to the lateral movement of the track.



Photo from Keystone View Company

Repair Work in a Locomotive Shop in Berlin

The Financing and Final Allocation of the Standard Equipment

THE TABLE BELOW, issued recently by the Association of Railway Executives, shows the equipment purchased from the Railroad Administration under the terms of the equipment trust certificates dated January 15, 1920. This equipment totals 93,450 cars and 1,911 locomotives. It does not represent exactly the standard equipment purchased and allocated by the Railroad Administration. There are a number of cars and locomotives included which were not standard equipment and several roads which were allocated standard cars or locomotives did not finance them through the agreement to which the table relates. The total orders placed by the Railroad Administration were for 100,000 cars and 1,950 locomotives.

The table shows the equipment trust agreements made by the roads concerned, arranged in order of the number of the respective agreements made between the Director General of Railroads, the Guaranty Trust Company as trustee and the carriers. It shows the type of equipment financed by each road under the agreement, the minimum and maximum values of this equipment and the amount of the temporary notes issued on January 15. Inasmuch as the actual value of the equipment was not determined at the time the

notes were issued, these minimum and maximum values were worked out as limits to surround the actual price which would be developed later. The temporary notes were for even amounts, and were supplemented by payments of cash to cover any difference between the value of the notes and the minimum price. In some cases in which the roads had not as yet received all the equipment assigned to them, that fact was also taken into consideration.

An examination of the table and a comparison with the original allocations will show, as noted above, the inclusion of certain equipment not included in the original list of standard equipment and also the omission of certain standard equipment financed in other ways.

Freight Cars

The freight cars included which were not standard equipment are as follows:

Louisville & Nashville—300, 50-ton composite gondola cars. The 50 cabooses, 100 refrigerator and 12 passenger cars shown in the footnote as included by this road also were not standard equipment.

The standard cars which were allocated but which were not included in the totals for the reason that they were financed in some other way than through these equipment trust certificates were as follows:

	20-Ton Single Hopper	20-Ton Double Hopper	30-Ton Composite Gondola	30-Ton Hopper	40-Ton Low Side Gondola	Light Hopper	Heavy Hopper	Light Motor	Heavy Motor	Light Flat	Heavy Flat	Light Santa Fe	Heavy Santa Fe	Light Motor	Heavy Motor	4-Wheel Switch	6-Wheel Switch	Maximum Price	Minimum Price	Temporary Notes Issued Jan. 15
1. Ann Arbor R. R.	200																	\$796,300	\$862,500	\$796,000
2. Atchafalaya, Topeka & Santa Fe R. R.																		7,337,500	7,917,000	6,875,000
3. Atlanta, Birmingham & Atlantic R. R.	200		150															899,750	1,026,241	958,500
4. Atlantic Coast Line R. R.		950	300							45							10	6,329,010	6,728,308	6,379,500
5. Charleston & Western Carolina R. R.																		817,500	879,720	817,500
6. Baltimore & Ohio R. R.	500			1,900	500	100				30						25	40	17,379,650	17,135,498	17,375,500
7. Morgantown & Kingswood R. R.				1,000														2,905,000	2,829,320	2,905,000
8. Boston & Maine R. R.		500	1,500										20					6,695,900	6,948,715	5,328,500
9. Buffalo, Rochester & Pittsburgh R. R.				800														2,691,000	2,393,456	2,004,000
10. Carolina, Cincinnati & Ohio R. R.	200			1,750													16	6,944,000	6,792,625	6,943,500
11. Central R. R. of New Jersey	200			1,000				21									10	5,715,000	6,715,484	3,485,250
12. Chesapeake & Ohio R. R.	1,000			2,000						5							35	11,206,000	12,384,900	11,206,000
13. Chicago & Alton R. R.			500														10	1,816,500	1,908,005	1,816,500
14. Chicago & Eastern Illinois R. R.																		741,000	800,340	741,000
15. Chicago Northwestern R. R.	1,000	1,250	1,000														35	9,374,875	10,744,675	9,374,500
16. Chicago & Western Indiana R. R.																		279,875	310,015	279,875
17. Chicago, Burlington & Quincy R. R.		500	1,000														10	6,984,000	6,561,925	6,980,000
18. Colorado & Southern R. R.				300									5				10	1,063,250	1,185,381	1,050,000
19. Fort Worth & Denver City R. R.										5								510,750	540,135	510,750
20. Chicago Junction R. R.																		443,450	504,686	443,450
21. Chicago, Indianapolis & Louisville R. R.			300														14	1,040,500	1,091,383	1,039,500
22. Chicago Great Western R. R.																		692,375	715,805	692,375
23. Chicago, Milwaukee & St. Paul R. R.	4,000							100										16,445,000	18,142,700	16,445,000
24. Chicago, Rock Island & Pacific R. R.		2,500																8,117,250	8,762,510	8,117,250
25. Chicago, St. Paul, Minneapolis & Omaha R. R.		500	200															2,332,300	2,537,710	2,332,300
26. Delaware & Hudson Co.	500			1,000														3,912,500	4,365,545	3,912,000
27. Detroit, Toledo & Ironton R. R.		300																817,500	879,720	817,500
28. Erie R. R.	200																	1,307,000	1,458,442	1,307,000
29. Georgia R. R.	300		100										35				16	1,184,500	1,284,000	1,184,500
30. Great Northern R. R.		1,500															2	4,284,500	4,632,716	4,284,500
31. Hocking Valley R. R.			500															2,812,500	2,989,625	2,812,000
32. Illinois Central R. R.			2,660	1,000*														9,514,250	10,103,596	9,514,250
33. Kansas City Southern R. R.			100	200														964,500	1,075,500	964,500
34. Kansas City Traction R. R.																		188,750	219,500	188,750
35. Louisville & Nashville R. R.		1,300	1,000					14	50								10	10,469,369	11,149,399	10,469,369
36. Maine Central R. R.	300																	1,294,250	1,315,169	1,294,250
37. Minneapolis & St. Louis R. R.		300	250															1,478,750	1,566,972	1,478,750
38. Missouri, Kansas & Texas R. R.			250	3,000				25										1,429,456	1,480,456	1,429,456
39. Missouri Pacific R. R.			200															10,236,250	10,702,903	10,236,250
40. Nashville, Chattanooga & St. Louis R. R.																		1,288,000	1,369,537	1,288,000
41. New York Central R. R.	1,000	1,000	1,000	1,000	500	84											34	18,232,850	19,797,347	18,232,850
42. Cleveland, Cincinnati, Chicago & St. Louis R. R.		1,000		1,000		25											6	6,842,500	7,339,740	6,842,500
43. Indiana Harbor Belt R. R.																	20	255,000	278,240	255,000
44. Kenosha & Michigan R. R.			500														3	1,365,750	1,546,399	1,365,750
45. Lake Erie & Western R. R.																		854,250	935,076	854,250
46. Michigan Central R. R.	1,000		1,000															6,825,500	7,327,700	6,825,500
47. Pittsburgh & Lake Erie R. R.																		772,750	840,442	772,750
48. Pittsburgh, McKeesport & Youghiogheny R. R.	500				500													3,726,250	4,023,368	3,726,250
49. Rutland R. R.																		371,500	406,160	371,500
50. Toledo & Ohio Central R. R.		250		500													5	2,863,500	3,170,660	2,863,500
51. New York, New Haven & Hartford R. R.			1,500															4,397,500	4,813,590	4,397,500
52. Norfolk & Western R. R.	800																	6,867,750	7,673,680	6,867,750
53. Norfolk Southern R. R.			50															137,250	149,500	137,250
54. Northwestern Pacific R. R.																		272,500	293,340	272,500
55. Pennsylvania R. R.	9,500		100	3,300†	2,500	5							130				30	57,873,500	61,921,383	57,873,500
56. Monongahela R. R.																		494,000	535,560	494,000
57. Pere Marquette R. R.		2,000		1,000													10	9,814,500	10,796,920	9,814,500
58. Richmond, Fredericksburg & Potomac R. R.	350																	985,250	1,075,357	985,250
59. Seaboard Air Line R. R.																		1,650,375	1,828,095	1,650,375
60. Southern R. R.			2,000														10	10,293,250	10,977,193	10,293,250
61. Mobile & Ohio R. R.			100														14	2,815,000	3,072,450	2,815,000
62. Southern Pacific R. R.	1,000																	10,293,250	10,977,193	10,293,250
63. Spokane, Portland & Seattle R. R.			300															844,991	914,991	844,991
64. St. Louis-San Francisco R. R.			3,500	1,000														2,815,000	3,072,450	2,815,000
65. Terminal R. R. Assn. of St. Louis																		817,500	879,720	817,500
66. Texas & Pacific R. R.																		14,034,425	15,028,101	14,034,425
67. Toledo, St. Louis & Western R. R.																		315,750	360,400	315,750
68. Toledo, Toledo Shore Line R. R.				450														2,385,250	2,525,289	2,385,250
69. Virginia R. R.				200														1,127,250	1,273,194	1,127,250
70. Washburn R. R.		2,800																501,000	565,854	501,000
71. Washburn R. R.																		1,631,500	1,839,160	1,631,500
72. Washington Southern R. R.	150		1,000															11,125,000	12,111,160	11,125,000
73. Washington Terminal																		422,250	460,867	422,250
74. Western Maryland R. R.																		95,025	106,147	95,025
75. Wheeling & Lake Erie R. R.			1,000															844,500	921,735	844,500
76. Grand Trunk Western R. R.																		4,587,250	4,918,370	4,587,250
77. Grand Trunk R. R. Co. of Canada		600																3,028,375	3,278,585	3,028,375
78. Alabama Great Southern R. R.																		889,375	963,568	889,375
79. Cincinnati, New Orleans, Texas & Pacific R. R.	24,000	23,200	20,050†	22,300	4,000	588	280	47	15	96	30	102	190	45	106	343	170	957,750	1,040,095	957,750
																		353,367,196	382,425,376	329,091,250

*200 of these 50-Ton Hopper

†2000 of these 10-Ton Hopper

‡In addition 50 Composite Gondolas, 4 Steel Flat, 4 Middle Road Smoking Cars

§End Steam Smoking Cars, 3 Steel Flat, 1

Bessemer & Lake Erie—500, 55-ton hopper cars, valued at \$1,408,500.

Delaware, Lackawanna & Western—800, 40-ton double sheath box cars and 800, 55-ton hopper cars, a total of 1,600, valued at \$4,588,800.

Elgin, Joliet & Eastern—500, 40-ton double sheath box cars, valued at \$1,459,500.

El Paso & Southwestern—250, 50-ton composite gondola cars valued at \$674,250.

Florida East Coast—500, 40-ton double sheath box cars valued at \$1,459,500.

Philadelphia & Reading—1,000, 50-ton single sheath box cars; 2,000, 55-ton hopper cars; and 500, 70-ton low side gondola cars, a total of 3,500 cars valued at \$10,271,000.

These cars, not financed through this issue of equipment trust certificates, total 6,850. Adding these to the 93,450 shown in the table and deducting the 300 non-standard financed by the Louisville & Nashville gives the total of standard orders of 100,000. For convenience these are shown also in the following table:

TABLE A

	50-ton single sheath box	40-ton double sheath box	50-ton com- posite gondola	50-ton hopper	70-ton low side gondola
Bessemer & Lake Erie.....	.....	.....	.....	500	.....
Delaware, Lackawanna & Western.....	.....	800	.....	800	.....
Elgin, Joliet & Eastern.....	.....	500	.....	.....	.....
El Paso & Southwestern.....	.....	.....	250	.....	.....
Florida East Coast.....	.....	500	.....	.....	.....
Philadelphia & Reading.....	1,000	.....	.....	2,000	500
Shown in table.....	24,000	23,200	20,050	22,200	4,000
Total.....	25,000	25,000	20,300	25,500	4,500
Deduct Louisville & Nashville.....	.....	.....	300	.....	.....
Standard equipment orders.....	25,000	25,000	20,000	25,500	4,500
Total, 100,000.					

Locomotives

A similar examination in the case of locomotives shows that there are included in the table the following locomotives which were not included in the original allocations:

Chesapeake & Ohio—The table shows 50 locomotives of which 15 light Mallet and 10 Eight-wheel switching locomotives were not standard equipment.

Hocking Valley—20 light Mikado locomotives.

Louisville & Nashville—The table shows 84 locomotives of which 34 were not standard equipment, namely 30 heavy Mikado and 4 Eight-wheel switching locomotives.

ment but did not finance it in this issue of equipment trust certificates:

Atlanta & West Point—2 Eight-wheel switching, valued at \$88,000.

Bessemer & Lake Erie—5 heavy Sante Fe, valued at \$337,500.

Duluth, Missabe & Northern—10 light Sante Fe, valued at \$623,000.

Elgin, Joliet & Eastern—8 Eight-wheel switching, valued at \$352,000.

El Paso & Southwestern—5 heavy Mikado, valued at \$294,000.

Lehigh & Hudson River—4 light Mikado, valued at \$214,400.

New York, Chicago & St. Louis—10 light Mikado, valued at \$536,000.

Northern Pacific—4 Eight-wheel switching, valued at \$184,300.

Oregon Short Line—20 light Mikado and 5 Six-wheel switching, valued at \$1,252,000.

Philadelphia & Reading—30 P. & R. Consolidations, valued at \$1,608,000.

Pittsburgh & West Virginia—3 heavy Mikado and 2 Six-wheel switching, valued at \$232,800.

Union Pacific—20 light Mikado and 10 Six-wheel switching, valued at \$1,432,000.

Western Pacific—5 heavy Mikado, valued at \$317,160.

The table shows a total of 1,911 locomotives. Deducting the 104 locomotives shown as not being of standard design leaves 1,807. Adding the 143 locomotives noted as having been allocated but not financed through this issue of equipment trust certificates gives 1,950, which was the total number of locomotives ordered by the Railroad Administration on its standard equipment orders.

For convenience these facts are shown in table B.

Cox on the Railroad Problem

GOVERNOR COX of Ohio, Democratic nominee for president, in his address accepting the nomination, expressed his views upon the railroad problem in the following words:

"Any discussion of the question of food supply leads very quickly to the closely related matter of transportation. There is no one thing which brings us so intermittently to critical

TABLE B

	Light Mikado	Heavy Mikado	Light Mountain	Heavy Mountain	Light Pacific	Heavy Pacific	Light Santa Fe	Heavy Santa Fe	Light Mallet	Heavy Mallet	6-Wheel Switch	8-Wheel Switch	P.&R. Consol.
Shown in table.....	588	289	47	15	96	20	102	190	45	106	243	170	...
Deduct—Not standard equipment.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chesapeake & Ohio.....	.....	.....	.....	.....	.....	.....	.....	.....	15	.....	.....	10	.....
Hocking Valley.....	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	.....
Louisville & Nashville.....	.....	30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Missouri, Kansas & Texas.....	.....	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Add standard equipment not shown in table.....	568	234	47	15	96	20	102	190	30	106	243	156	...
Atlanta & West Point.....	.....	.....	.....	.....	.....	.....	.....	5	.....	.....	.....	2	.....
Bessemer & Lake Erie.....	.....	.....	.....	.....	.....	.....	10	.....	.....	.....	.....	.....	.....
Duluth, Missabe & Northern.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8	.....
Elgin, Joliet & Eastern.....	.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
El Paso & Southwestern.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lehigh & Hudson River.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
N. Y. C. & St. L.....	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	.....
Northern Pacific.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oregon Short Line.....	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	5	.....	.....
Philadelphia & Reading.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	30
Pittsburgh & W. Va.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....
Union Pacific.....	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	10	.....	.....
Western Pacific.....	.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total standard equipment....	625	244	47	15	96	20	112	195	30	106	260	170	30
Total, 1,950.													

Missouri, Kansas & Texas—25 heavy Mikado locomotives.

Atlantic Coast Line—This company included 10 unallocated Mikado locomotives which are not shown in the table.

The following railroads were allocated standard equip-

conditions than the insufficiency of our transportation facilities.

"Any attempt to discredit the federal operation of railroads during the years of grave emergency is unfair.

"The government and the public should render every co-

operation in the utmost good faith, to give thorough test to private ownership. The railroads have had their lesson. Government regulation is accepted now as not only a safeguard to the public, but as a conserving process to the utility. Financial credit is necessary to physical rehabilitation and it should be sufficient for the periods of maximum demand. We should not lose sight, however, of the vast possibilities of supplementary service by water. The Great Lakes and St. Lawrence navigation project, particularly, should claim the interest of the government.

"In the crop-moving period the call on the railroads is staggering. Grain piles up in the elevators. With stagnation more or less general, the farmer sells his product under the most unfavorable conditions.

"The solution would be simplified by utilizing the waterways. Aside from this, the accruing gain from every crop would be a consideration for the reason that the price of grain in this country is made by the Chicago market and it is determined by the London quotations."

Forest Products Laboratory Proposes New Attack on Marine Borer Problem

IN SPITE OF THE PROGRESS made in pile protection in the past, there is not yet available a uniformly reliable and satisfactory method for preventing damage by marine borers. Creosoting is the most widely used protective method and has proved its great value, but it has not been uniformly successful. Mechanical protections in the form of lock joint pipe, concrete coatings, treated battens, and a great variety

of other coatings or pile armors have been tried, but the service being obtained from them is not well known and their use does not seem to have become general.

The Forest Products Laboratory, during the 10 years of its existence, has been studying various phases of the subject and has collected a considerable amount of valuable data. It has never been able, however, to give the subject the time and attention it deserves. Realizing its increasing importance, and the great value of the information which would be obtained by an intensive study, a new plan for intensive investigation is now proposed. This includes a survey of the whole Atlantic, Pacific and Gulf coasts of the United States, covering all the harbors of any importance, to obtain information on: The type or types of borers present, the seriousness of their depredations, the kinds of piling used, the durability of the piling in the various harbors and the methods and effectiveness of the protection used.

This work will require several years for its completion although much valuable information will be obtained fairly promptly. It is estimated that the work will cost about \$50,000 for the first three years. As it is not anticipated that the Forest Service will be able to secure a sufficient appropriation for this work from the government in the near future, it can be carried on only through aggressive co-operation from other interested agencies, such as the railways, the timber producers and the commercial timber treating companies, who will benefit from the results obtained. Plans are now under way to bring this subject to the attention of those interested in the hope that finances may be arranged so that the work can be undertaken promptly.

Frank Trumbull

ON the 12th day of July, 1920, Frank Trumbull departed this life in the sixty-second year of his age. With a brief intermission, he devoted his entire business career to the service of transportation.

Beginning work at the early age of 12, and entering the lowest ranks of his adopted profession, he gradually made his way up through every step of advancement until he reached the responsible offices of president and chairman of the board of several important railroad corporations—positions which he held and administered with distinguished success until his fatal illness and death.

His intellectual interests were, however, far wider than any individual corporation. He became a philosopher of transportation and a broad-minded student of its relationship to Government and to the interests of all the people. He was one of the small number who originated and he became the first chairman of what now has become the Association of Railway Executives. He devoted himself without reservation or limit to the purpose of bringing about an understanding by the public of the problems of transportation in their relationship to the welfare and prosperity of society and an appreciation of their essentially national character and importance.

He was chairman of the committee of executives which called on the President in September, 1914—shortly after the outbreak of the world war—and drew from him a public

declaration of sympathy and helpfulness for the railroads and an appeal to the public to aid in building them up to the proper standard of capacity and service.

He was instrumental in bringing about the comprehensive study of the railroad problem which was made by the joint committee of Congress headed by Senator Newlands and in which the constructive policies now crystallized into statute law had their birth.

But his interests were wider still. In the midst of his engrossing business employments, he found time to devote to the service of humanity in many of its vital needs and aspects. He associated himself actively and helpfully in many educational and charitable undertakings and spent largely of his efforts and his means in promoting the welfare of his fellowmen, showing especial interest in the industrial development and education of the colored race.

His effort and ambition was to make life easier for those with whom he came in contact and if good and kindly deeds blossom into happiness beyond the grave he is now receiving that reward of his generous and well spent life. We, his friends and associates of many years, deeply deplore his death and pay to his memory this tribute of affection and regard.

Minutes adopted by Association of Railway Executives in memory of Frank Trumbull, former chairman of the Railway Executives Advisory Committee, July 16, 1920.

Transportation Conditions Show Improvement

Reports of Local Committees on Car Service and Statistics of Freight Car Performance

WASHINGTON, D. C.

THE COMMISSION on Car Service has compiled a report of the activities of its 35 local car service committees for the month of July. The work of the committees at all points has progressed during the month with very satisfactory results. The six additional committees referred to in the report of July 1 have their work at their respective terminals well under way.

In all cases there has been a most thorough co-operation on the part of the traffic committees, their efforts being directed principally toward disposition of embargoed cars, the re-routing of freight under I. C. C. Order No. 1, and following up with shippers and consignees for more prompt loading and unloading of equipment. Good results have been obtained in connection with each of these items. At several terminals arrangements have been made for the assignment of freight solicitors to inspection service with very excellent results.

The committees continue to hold meetings at frequent intervals with the chambers of commerce and other local trade bodies, and it is very gratifying, indeed, the report says, to note the thorough co-operation that is being given the committees.

One of the principal difficulties that has been encountered by the committees is in connection with embargoed cars. It is very evident, the report says, that the question of enforcement of embargo restrictions at points of origin on many roads is not receiving the attention it should have, and as a consequence cars are being continually loaded in violation of existing restrictions and allowed to go forward, resulting in cars being tied up at intermediate terminals and outlying sidings. It is also apparent that in many cases embargo files are not being properly cleared in respect to modifications and cancellation of embargoes, since many cars have been found which prove to be unrestricted and should have gone forward. It is also clearly evident that the permit system is being abused and not properly handled since it is found that permits are being issued, and cars forwarded thereon without due regard to intermediate conditions. These matters should be given prompt and careful attention and such measures adopted as will make existing embargoes effective and furnish a proper check against cars moving on valid permits.

Some difficulty has been experienced at certain points in connection with the accumulation of shipments for re-consignment and, where necessary, this condition is being met by suitable embargo. Another difficulty that has confronted the committees at large centers such as New York, Philadelphia, Chicago, etc., is the receipt of shipments billed with no specific siding or station delivery given, and it is recommended that all roads take this matter in hand and see that billing covering shipments to large centers give specific siding and station delivery, in order to prevent unnecessary switching and delay to equipment at destination. The forwarding of straight consignments and "order notify" shipments to notify parties at other than destination of freight is also causing difficulty and delay to equipment. Attention is directed to the fact that the accepting of traffic for one point with provisions to notify consignees at another point is in conflict with the spirit of Consolidated Official Classification Rule 7, and should be discontinued. It is suggested that the railroads take such action as may be necessary to correct this difficulty.

At one or two points difficulty has been experienced due

to the fact that certain roads are not using inter-line billing, making it necessary to re-bill freight at junction points, which not only causes delay to equipment but involves unnecessary clerical expense. It is suggested that proper action toward uniform practice be taken in this connection, by the roads concerned.

The bad order situation continues acute at some points and is deserving of close and careful attention on the part of the roads concerned. It is particularly noted that at some of the larger industrial centers, especially the steel centers, there are large numbers of bad order cars standing idle, while some plants have had to shut down and others are on the verge of having to suspend operations, due to conditions of car supply. This situation is particularly acute since the issuance of Interstate Commerce Commission Service Order No. 7. It is suggested that wherever possible arrangements should be made with these plants for repairing bad order cars.

Such an arrangement would serve the double purpose of furnishing work for the plant that might otherwise have to shut down, and at the same time produce equipment in which to forward their shipments. It is realized that in many cases these plants would not be in position to produce the necessary plates and forms for repairing the cars, but in such cases the required material could be furnished and the plant do the assembling and repair work.

By concentrated efforts on the part of the committees the use of cars in crosstown movement has been either eliminated or reduced to a minimum at all committee points. In many cases embargoes have been placed under which cars for crosstown movement are furnished only on permit, issued by the committee chairman or other authorized agent, such permits being issued only in cases where it is not possible to handle by truck. In other cases the committees have been able to control the matter by close co-operation and with the consignee, and furnishing cars only in exceptional cases.

Some of the principal things mentioned in the report as accomplished by the committees at the more important terminals since the report of July 1, are as follows:

Atlanta—45 cars on hand under load automobiles held account inability consignees to lift bills of lading released by unloading to public storage at owners' expense. Endeavoring to arrange storage space for 50 cars hay and feed to release equipment. Large handlers of freight, such as contractors and fertilizer plants receiving large quantities of material, have employed additional trucks and labor resulting in release of 150 to 200 additional cars per week above normal. The Manufacturers' Association of the Southeast has placed at the disposal of the Car Service Committee, a committee of their membership which is doing excellent work among their members in connection with heavier loading and more prompt loading and unloading of cars. Committee continues to divert freight to the Central of Georgia at Chattanooga to relieve accumulation on Southern Railway and prevent delay. Arrangements made for special switching service for consignees who increase facilities and manifest desire to speed up on unloading. All lines refusing to place cars for crosstown movement except in emergency cases. It is estimated this practice is saving approximately 200 cars per week in the Atlanta terminals. No embargo has been necessary in this connection. Accumulation of watermelon shipments for reconsignment prevented by arranging with lines to place embargo with permit system. 131 cars held at Atlanta and

175 held at Augusta under embargoes disposed of by trading and re-routing to lines in position to handle.

Baltimore—Situation practically normal. Efforts of committee have been directed toward prevention of accumulations and other abnormal conditions. Arrangements made with traffic committee for use of freight soliciting force as inspectors, who are following up with consignees prompt release of equipment, with good results.

Boston—Situation normal—no special activities.

Buffalo—To relieve interchange situation between Pennsylvania Railroad and D. L. & W. arrangements made for movement of approximately 40 carloads coal daily to D. L. & W. at Mt. Morris, formerly interchanged in the Buffalo Terminal. To relieve temporary congestion on the Nickel Plate arrangements made for diversion of 120 loaded west-bound cars to the New York Central and 200 empty box cars moving west on commission orders to the Michigan Central.

To relieve Pittsburgh gateway Pennsylvania Railroad has arranged for diversion of eastern freight destined to Chicago to the Buffalo gateway for movement beyond via Grand Trunk, Wabash & Nickel Plate at rate of one train per day via each road. Large number of embargoed loads disposed of by trading between lines and re-routing via lines in position to handle. This matter being vigorously handled with roads at fault in effort to break practice of accepting cars in violation of embargoes. Inspectors making special drive on violations Interstate Commerce Commission Service Order No. 7, resulting in material decrease in number of violations. Each case discovered is handled with the road at fault. Due to arrangements made in connection with handling an increased car supply the loading of ore and grain out of Buffalo continues to show gratifying increase. Embargo against use of cars in cross-town movement placed by Erie, D. L. & W. and New York Central Railroads, resulting in a saving of approximately 142 cars and 24 engine hours per day.

Chicago—Cars held out on lines for movement to and through Chicago reduced from 3,765 on July 24 to 1,752 on July 28. Traffic forces on various lines conducting vigorous campaign with consignees for release of cars. Various commercial clubs and associations are co-operating in this connection. Embargo, with permit system, placed on cross-town movement which so far has resulted in saving of approximately 50 per cent of cars formerly used in this service.

Cincinnati—Account heavy run of business from the south via Big Four at Cincinnati, approximating 50 per cent increase over last year, Big Four unable to take promptly all business offered from L. & N. To relieve the situation arrangements were made to switch out solid trains of this freight for Toledo and divert to B. & O. for movement via its Toledo division. Cars held out on lines for movement to and through Cincinnati reduced from 1,411 on July 21 to 162 on July 28. To overcome delay to cars of lumber held in Cincinnati district for reconsignment, committee has arranged embargo with permit system on shipments of lumber for Cincinnati, under which permit is issued only when final destination can be given. Special attention being given to loading of cars to full capacity. Embargo, with permit system, placed on cross-town movement with good results in saving of equipment, approximately 50 per cent. To relieve bad order situation, L. & N. and C. & O. railroads are sending cars to shops, outside of Cincinnati territory, in position to make repairs.

Cleveland—Daily check is being made of excessive delays to cars at industries and team tracks—each case being handled for improvement. Embargo is used where necessary. Shipments placed in public storage where it is found consignee cannot unload promptly. To relieve Pennsylvania Railroad some of the freight normally routing via

that line west of Cleveland has been diverted to the Nickel Plate. Considerable difficulty experienced account of cars arriving in violation of embargoes. These cars are being disposed of by trading and re-routing wherever possible. Pennsylvania has been making up solid Big Four trains and interchanging with the Big Four on main tracks, also to avoid yard movement New York Central has been making up solid trains for Big Four and delivering to that line at point outside of Cleveland terminals. Cars held out on Big Four reduced from 1,000 on June 26 to 174 on July 17. Committee has developed that some industries are holding cars under load within their plants and calling for empties for outbound loadings. All lines have been requested to investigate thoroughly, with a view to curtailing supply of empties where necessary to correct this situation. Embargo, with permit system, placed on cross-town movement with good results.

Denver—Committee continues to unload automobiles to public storage to release equipment. The use of cars in cross-town movement being restricted to emergency cases, cars not suitable for outside traffic being used in practically all cases. Representatives of committee make daily canvass of situation with respect to prompt release of cars. Each load on hand 72 hours or more is handled with consignee, with good results. Denver Transportation Bureau co-operating with committee and handling with consignees to secure more prompt release of equipment. Situation practically normal.

Detroit—Special campaign being carried on by Detroit Board of Commerce with shippers in connection with prompt handling of refrigerator cars. Daily canvass of situation being made at warehouse, team tracks and private sidings, resulting in materially speeding up loading and unloading of equipment. Wherever possible arrangements are being made with consignees to take team track delivery in cases where there is more freight on hand than can be delivered to consignee's siding.

Kansas City—414 cars held under embargoes and inability of roads to handle disposed of by re-routing. July 1 to 24. Arrangement for solid train movement to Chicago, Kanapolis, Huntington and eastern points continued with good results. Committee reports 43 solid trains so handled during the past three weeks. Bad order cars being forwarded to other shops in position to repair. Five cars of automobiles placed in public storage to release equipment, account consignees' inability to lift bills of lading.

New York—Diversion of a portion of the freight for New England points around New York gateway has been continued, resulting in release and advancing the movement of large numbers of cars. To relieve accumulation of C. R. R. of N. J. for Pier 18, arrangement made for diversion of solid trains of bituminous coal to Arlington on B. & O., resulting in release of a large number of cars. Two solid trains run from St. George to Philadelphia, under arrangement with B. & O., to allow their crews to run to Philadelphia instead of being cut out at Cranford Junction. Arrangements made for acceptance of freight for New York territory at stations and yards where it can be most conveniently handled, resulting in more prompt release of a large number of cars. By co-operation with Washington committee, arrangements made for release and forwarding of a large number of restricted cars held on lines south of Potomac Yard. Arrangements made to work repair forces on Sundays wherever possible to aid in releasing bad order cars. Pennsylvania continues to interchange through tubes. Vigorous campaign for prompt loading and unloading of cars continued with good results. Committee giving consideration to the use of Jersey Shore rail and interior stations for use in unloading automobiles from which points they can be roaded to New York City, thus releasing New York

terminals, generally used for this purpose, for the handling of other traffic.

Norfolk—Since July 1 committee has disposed of approximately 1,600 cars held under restrictions and embargoes, by trading and re-routing to lines in position to handle. Bad order cars reduced from 1,507 on July 1, to 841 July 24.

Philadelphia—Labor situation improving. Stevedore strike which began May 27 ended July 8, since which time there has been a decided improvement in unloading of export freight. 2,618 cars of Tidewater coal unloaded week ending July 15. 3,235 cars unloaded week ending July 22. Through increased activities and co-operation of traffic and operating departments 14,710 cars were unloaded in the terminal for the week ending July 15; 15,058 cars unloaded week ending July 22. Representatives of traffic departments have been detailed to assist in checking up and securing necessary information in connection with campaign for more prompt handling and release of cars.

Pittsburgh—Further violations of I. C. C. Service Order No. 7 developed and handled with offending lines for correction. Considerable difficulty being experienced in this territory in connection with car supply for industries as a result of Service Order No. 7. Bad order situation extremely serious. It has been suggested that arrangements be made with car builders and steel industries for making necessary repairs, thus giving employment to plants whose operation would otherwise be curtailed account of car supply, and at the same time producing cars with which to protect outbound shipments. Close attention being given to cars held for billing, reducing number on hand to minimum.

St. Louis—Arrangements made for assignment of rep-

culty experienced in furnishing cars for agricultural machinery. Lines interested called together and vigorous efforts being made to protect. Jurisdiction of this committee extended to cover head of the lakes and situation at these points being handled with excellent results.

Washington—Considerable difficulty experienced in connection with cars held on lines south of Potomac Yards, due to embargoes and restrictions against New York and New England territory. Chairman of the Washington committee secured list of these cars and visited New York, and by working closely with the committee at that point and the railroads interested, succeeded in disposing of a large number of the cars. To date the accumulation of cars has been reduced to 355, with additional releases daily. Eighteen cars held for Cuba disposed of by handling with Florida East Coast R. R. Arrangements made for placing in public storage shipments of household goods, and automobiles which consignees are unable to release. Current business moving freely through Potomac Yards.

Des Moines—To speed up and prevent delay to cars handled through the Iowa Transfer Railway Yard where joint interchange and joint inspection between all roads are made a penalty of 50 cents per car for each 12 hours that cars are permitted to remain in the transfer is assessed against the offending road. The transfer company has also placed a switch engine in the transfer yard to do all assembling of cars in road order. These arrangements have resulted in prompt removal of cars and have accomplished all that has been expected in preventing delays.

Indianapolis—800 embargoed cars disposed of in past two weeks by diversion to open routes and advancement

REVENUE FREIGHT LOADED AND RECEIVED FROM CONNECTIONS

WEEK ENDED SATURDAY, JULY 24, 1920

Districts	Year	Grain and grain products	Live stock	Coal	Coke	Forest products	Ore	Mdsc. L. C. L.	Miscellaneous	Total revenue freight loaded			Received from connections		
										This year 1920	Corresponding year 1919	Corresponding year 1918	This year 1920	Corresponding year 1919	Corresponding year 1918
Eastern	1920	5,464	2,419	54,341	4,665	8,681	9,483	32,940	103,020	221,103	230,406	231,120	252,479	228,291	247,587
	1919	9,802	2,313	49,604	2,791	7,387	7,977	17,860	117,384	190,715	189,139	223,344	129,856	138,274	195,065
Allegheny	1920	2,138	3,058	61,674	5,791	3,617	10,609	34,619	69,209	35,431	36,593	43,484	20,022	18,307	23,611
	1919	3,955	2,988	55,604	3,123	3,734	13,379	37,486	68,876	189,139	189,139	223,344	129,856	138,274	195,065
Pocahontas	1920	164	125	22,579	712	1,863	203	3,009	6,776	35,431	36,593	43,484	20,022	18,307	23,611
	1919	310	186	24,022	431	2,078	216	119	9,231	35,431	36,593	43,484	20,022	18,307	23,611
Southern	1920	3,260	2,204	24,901	1,295	16,541	2,835	26,542	46,812	124,390	113,255	123,039	79,681	69,995	72,229
	1919	4,449	2,100	21,425	270	16,854	1,899	9,081	57,177	158,891	113,255	123,039	61,973	60,917	69,199
Northwestern	1920	8,542	7,190	11,335	1,514	15,742	46,649	29,251	38,668	158,891	157,397	165,479	67,025	63,452	62,768
	1919	9,594	9,606	9,091	1,290	15,507	44,127	21,364	46,818	157,397	157,397	165,479	67,025	63,452	62,768
Central Western	1920	10,615	8,549	21,875	470	6,159	3,158	24,433	49,131	124,390	120,238	127,884	52,176	49,072	43,515
	1919	14,618	9,240	18,724	319	5,082	3,603	23,510	45,142	124,390	120,238	127,884	52,176	49,072	43,515
Southwestern	1920	4,671	2,994	5,472	195	8,200	327	16,247	22,856	60,962	62,654	62,204	663,212	628,308	713,974
	1919	8,817	2,965	5,313	147	8,165	323	12,901	24,023	60,962	62,654	62,204	663,212	628,308	713,974
Total all roads	1920	34,854	26,539	202,177	14,642	60,803	73,264	167,041	336,472	915,792	909,682	976,554	663,212	628,308	713,974
	1919	51,545	29,392	183,783	8,371	58,807	71,524	122,321	368,651	909,682	909,682	976,554	663,212	628,308	713,974
	1918	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Increase compared...	1919	.....	.....	18,394	6,271	1,996	1,740	44,720	.....	6,100	.....	.....	34,894	.....	.....
Decrease compared...	1919	16,691	2,583	.....	.....	.....	.....	.....	32,179	.....	.....	.....	.....	.....	.....
Increase compared...	1918	.....	.....	.....	.....	.....	.....	.....	.....	60,762	.....	.....	50,762	.....	.....
Decrease compared...	1918	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

representatives of traffic departments to act as inspectors who are making close check in connection with open top cars in cross-town movement; delays in loading and unloading of equipment; following up cars held for connecting lines, and arranging open routes and permits on embargoed cars with good results, also checking freight houses daily and releasing L. C. L. freight in large quantities. Embargoed cars released and disposed of since May 25—5,277. Cars disposed of by re-routing under L. C. L. Service Order No. 1 since May 25, 6,855. Arrangements made for meeting with automobile manufacturers and dealers' association to discuss plans for controlling automobile shipments with view to conserving cars.

Twin Cities—Cars held on account of embargoes, restrictions and other causes reduced to 211. These being followed closely with good prospects of early release. Some diffi-

ties experienced in furnishing cars for agricultural machinery. Accumulation of cars for the Central Public warehouse on Big Four reduced to normal by arranging with consignee to accept team track delivery on other lines. To assist in disposition of merchandise cars ordinarily handled at Columbus, a large number of such cars have been forwarded to Indianapolis for handling.

More Freight Handled

As noted in last week's issue, the various reports received by the Commission on Car Service are showing a fairly steady improvement in transportation conditions, as reflected by increases in the volume of freight handled, in the reduction of congestion as shown by the accumulation reports and in the coincident decrease in the car shortage figures.

For the week ending July 24 there were loaded on the railroads of the United States 915,972 cars of commercial

freight, as compared with 909,682 in the corresponding week of 1919 and 976,554 in 1918. For four weeks ending July 24 the totals have been 3,437,235 for 1920, 3,365,046 for 1919 and 3,699,116 for 1918. For the eight weeks for which complete reports have been available, as some of the larger roads did not begin reporting before June 1, the totals have been for the three years, respectively: 6,842,735; 6,602,452, and 7,529,634. The Southern district for two weeks has shown a gain even over 1918. The latest report follows:

The accumulations of cars in excess of current movement, which on July 16 had been reduced for the first time below the figure reported preceding the switchmen's strikes, were further reduced during the week ending July 25 to 85,839, but by July 30 there was an increase to 90,571. This represents a small increase in the number of cars held on account of inability of consignees to accept, but principally an increase of 3,000 cars held for embargoes, which represents violations of embargoes by railroads in sending cars to points where they cannot be handled.

The deferred car requisitions for the week ending July 23 averaged 118,643, for the United States and Canada, or 112,093 for the United States alone, of which 34,045 were for coal cars.

The percentage of bad order cars to total cars on line, however, shows an increase from 6.5 on July 1 to 6.9 on July 15, in the case of box cars; from 7.8 to 8.2 in the case of gondola cars, and from 7.2 to 7.6 for all freight cars. Of the total of 176,672 bad order cars on July 15, 109,892 were held for heavy repairs and 66,780 for light repairs.

The Bureau of Public Health Service, in conjunction with the public health departments of different states, advises that there exists a widespread scarcity of chemicals necessary for water purification purposes throughout the country, together with more or less scarcity of raw materials in the hands of manufacturers of such chemicals.

To meet this situation carriers are requested, in a circular issued by the Commission on Car Service, to take such action as will afford prompt movement of materials to be used for the purification of public water supply, and for that purpose consigned to municipal authorities, or when for movement to plants for the manufacture of chemicals to be used for such purposes.

Bituminous operators in the National Coal Association have urged the Interstate Commerce Commission to take drastic steps to regulate the distribution of open-top car equipment to small country "wagon" mines, hundreds of which have sprung into activity during the coal shortage emergency. It is roughly estimated that there are upwards of 3,000 mines of this character throughout the bituminous coal fields. These so-called "wagon" mines, which are a considerable factor at this time in the speculative field, are located from one-half mile to 5 miles away from a railway switch, and have to haul their output by wagon or motor truck to the tracks. The mines, having only a small tonnage, draw upon the railroads daily for equipment, tying up cars at the switches because of their necessarily slow method of loading the coal. Hundreds of cars which are needed to overcome the shortage in equipment where facilities exist for quick loading and expeditious handling of the output, are in this way tied up.

Advices from bituminous coal fields throughout the country are said to show that in nearly every field "snow bird" or "mushroom" mines, ordinarily not in operation, have sprung into existence within the past few months, and that these mines are selling coal through speculators at exorbitant prices beyond those prevailing at the larger mines.

Northwest Wants More Cars

The Interstate Commerce Commission on Monday, August 9, gave a hearing to representatives of grain shippers and

state officials from the Northwest, who complained of the shortage of cars for the movement of grain and demanded that cars be returned to the western roads to the extent of 100 per cent of their ownership. It was stated that the western lines now have only about 85 per cent of the number of cars they own, although the latest report of the Commission on Car Service for July 15 shows that the Northwest district had 81.6 per cent of its ownership of box cars and 95.2 per cent of its ownership of all cars. They also complained to some extent of the condition of the grain cars.

Commissioner Aitchison pointed out that under orders from the Interstate Commerce Commission and the Commission on Car Service large numbers of grain cars are being relocated from eastern to western railroads, but most of the witnesses insisted that the number is insufficient. They declared that the Northwest will have a very large crop this year and O. P. B. Jacobsen, of the Minnesota Railroad & Warehouse Commission, asserted that 500,000 box cars were needed to move the grain.

Commissioner Potter inquired about the possibilities of increased storage facilities, but was told that the farmers cannot get either the money or the materials with which to provide storage. C. M. Reed of the Kansas Court of Industrial Relations, said that at the present rate it would take 28 months to move the hold-over from last year's crop in Kansas, which amounts to 12,000,000 bushels, and the new crop, estimated at 158,000,000 bushels.

Governor W. L. Harding of Iowa asked that the commission establish a rate on grain from Buffalo to New York which will equalize the difference between the all rail and the water and rail rates from Chicago so as to promote the lake shipment of grain and that every effort be made to see that grain is shipped by water up to the capacity of the boats. He said there is enough tonnage on the Great Lakes to carry 122,000,000 bushels of grain from Lake Michigan to Lake Superior ports to Buffalo on a single trip and that the utilization of lake boats to the fullest extent would release railroad equipment. Chairman Clark said that the commission has already given attention to that situation and that plans are being considered for insuring the largest possible grain movement by lake boats.

L. M. Betts, a member of the Commission on Car Service, showed that under orders issued by the Commission on Car Service and by the Interstate Commerce Commission 104,050 box cars have been ordered moved from eastern to western lines and that reports up to August 5 show that 65,284 had been delivered by the originating roads and 49,263 had been received by the destination roads, leaving a balance to be delivered of 54,787. Of these cars 53,300 had been ordered to the Northwestern district, 43,850 to the Central Western and 6,900 to the Southwestern. The cars are to be delivered to individual roads as follows: Green Bay & Western, 300; Chicago & North Western, 2,250; Chicago Great Western, 1,500; Chicago, St. Paul, Minneapolis & Omaha, 2,700; Great Northern, 17,000; Minneapolis & St. Louis, 3,300; Soo Line, 8,050; Northern Pacific, 18,200; Illinois Central, 3,750; Atchison, Topeka & Santa Fe, 8,450; Chicago & Alton, 950; Chicago & Eastern Illinois, 1,600; Chicago, Burlington & Quincy, 2,250; Chicago, Peoria & St. Louis, 3,000; Chicago, Rock Island & Pacific, 8,400; Toledo, Peoria & Western, 1,350; Union Pacific, 16,800; Missouri Pacific, 2,700; St. Louis-San Francisco, 2,100, and St. Louis Southwestern, 2,100.

The Interstate Commerce Commission on August 10 issued an order further extending for 30 days its Service Order No. 7, the order which gave general priority to bituminous coal in the use of open top cars east of the Mississippi river as amended by Service Order No. 9 entered July 13 and as further amended by order entered July 29. The new order therefore continues the priority in effect for a period of 90 consecutive days from June 21.

The Type "D" Coupler in Passenger Service

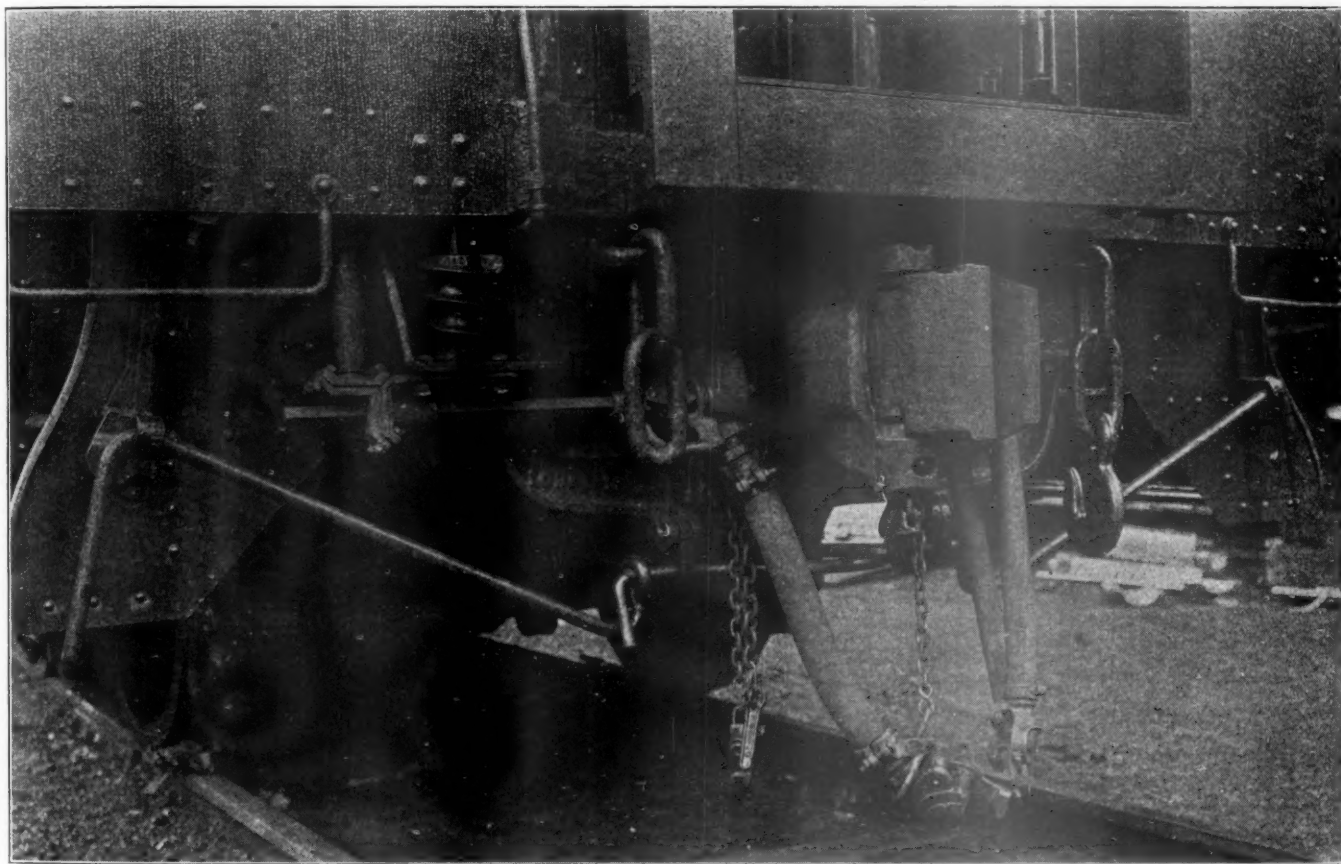
Difficulties Involved in Its Application—How the Problem Was Solved on New Pullman Cars

THE FIRST APPLICATION of the standard Type "D" coupler to passenger equipment has been made by the Pullman Company on the new sleeping cars which are now being built at a rate to approximate an output of about 600 cars a year. Adaptation of the Type "D" coupler to passenger cars, without alteration from its standard form as designed for freight service, involves considerable difficulty, its large overall dimensions causing it to interfere with the standard location of the train pipe connection. The trouble occurs on the knuckle or operating side of the coupler, which at its widest point extends out about $7\frac{3}{4}$ in. from the center line of the stem.

The standard location of train pipe connections requires

nections is fixed and cannot be varied without requiring an entire readjustment of hose lengths. To move these connections over, however, in order to increase the clearance between the coupler and the steam end valve would tend to shorten the distance between the brake and signal hose connections and increase the distance between the steam hose connections on the adjoining ends of coupled cars. This condition, combined with certain conditions encountered in curving, would tend to cause the coupled steam hose to raise and separate the air hose couplings.

The solution finally arrived at by the Pullman Company and worked out for application on the sleeping cars now being built, is shown in the illustrations. Essentially this



End View of a Pullman Car with Type "D" Coupler Application

a distance of 20 in. between the center of the connection for the signal hose and that for the steam hose, with the steam hose connection $9\frac{1}{2}$ in. from the center line of the car. With the steam heat connection but 12 in. back of the inside face of the coupler knuckle, it will be seen that with the draft gear compressed there is very little clearance between the steam end valve and the side of the coupler when the coupler stem is on the center line of the car. This clearance is entirely inadequate to take care of the lateral swing of the coupler in curving. To increase the distance of the steam hose connection from the center line of the coupler would require a corresponding decrease in the distance from the center line of the coupler to the brake and signal hose connections as the total distance between the two sets of con-

scheme involves the maintenance of a fixed relation between the center line of the coupler shank and the pipe connections, the latter being carried with the coupler in its lateral motion. This was accomplished by the design of a special coupler carrier casting with a long bearing face on which was placed a sliding saddle carrying the coupler and the ends of the train pipes. The bearing surface of the coupler carrier casting has a width of $4\frac{1}{4}$ in. and a total length of $38\frac{1}{2}$ in. The coupler saddle casting is 29 in. long.

Between the top and bottom flanges of the I-section of the carrier casting the web member is omitted for a distance of 20 in. at the center to accommodate a centering spring and followers. With the spring and followers inserted, the saddle casting is placed over the carrier casting, pockets

tached to the brake step. The gears are provided with finished hubs which have their bearings in reamed or drilled holes in the casing. The device is thus self contained and the alignment of the gears independent of the shafts. The vertical shaft is enclosed in a 1½-in. pipe sleeve which is threaded over the hub of the upper casing casting and extends through the vestibule floor. This protects the opening for the gear hub in the top of the casing from exposure to the weather and possibility of freezing.

The bottom operated standard Type "D" coupler head is cast integral with the Pullman standard 6½-in. by 7-in.

stem, 4 ft. 15⁄8 in. long from the striking horn to the center of the yoke connecting pin. The back end of the stem is attached to the cast steel coupler yoke by 2¼-in. pins in quadruple shear. The draft gear is the Westinghouse N. C. type. The coupler unlocking mechanism is of the National type and is suspended from the carrier casting, which is provided with integral lugs for that purpose. All tendency toward binding in the operation of the device has been eliminated by employing link suspension members instead of fixed bearings, and no difficulty is encountered in moving the knuckle to its full opening.

Blanket Supplement Authorized for Rate Advance

Interstate Commerce Commission Makes It Possible to Put New Rates Into Effect Without Delay

WASHINGTON, D. C.

THE INTERSTATE COMMERCE COMMISSION has issued a special permission order making modifications of its tariff rules to permit the general increases in freight rates authorized in Ex Parte No. 74 to be put into effect by the filing of special blanket supplements to the existing freight tariffs in abbreviated form, thereby enabling the carriers in the present emergency to secure in an economical and expeditious manner increased revenue to be derived from such increases in freight rates. The order includes a form of supplement to be used for this purpose, which may be applied to more than one tariff by referring to the specific numbers of the tariffs to which it applies, and in which the changes in rates will be shown by a table of rates stating the new figures to which the various sums of money will be increased by the application of the percentages and the rules for the disposition of fractions, etc.

The commission's rules and regulations in Tariff Circular 18-A, require tariff publications to show the forms and numbers of powers of attorney and concurrences under authority of which participating carriers are named; an explicit statement of rates, in cents or in dollars and cents, per 100 pounds, per barrel, or other packages, per ton or per car, together with the name or designation of the places from and to which they apply; limit the number of, and the volume of effective supplements to any tariff and forbid supplements to tariffs issued in loose-leaf form, and tariffs of less than five pages; prohibit a change in any rate sought to be increased by a rate which is under suspension by or order of the commission; and provide that rates filed must be allowed to go into effect, and cannot be changed for at least 30 days after the date when the rates have become effective:

The special permission order, No. 50,340, provides that the provisions of Tariff Circular 18-A in Rules 4 (b), 4 (i), 9 (e), 9 (k) and 54 (a), be temporarily waived in the particulars hereinafter set forth, but not otherwise, as to, and confined to, special supplements filed under authority thereof; Provided, That there shall not be in effect at any one time more than one such special supplement to the same tariff other than the special supplement providing minimum weights on grain and the products of grain and commodities listed therewith.

Carriers are permitted to file special supplements to freight tariffs to provide for the changes in rates and charges approved by the commission in Ex Parte No. 74; provided, that such special supplement shall be issued substantially in the manner and form shown in exhibit "A," which form may be, when necessary, modified to the extent necessary to clearly indicate the increases authorized in the report in Ex Parte No. 74, provided, that such modifications shall

in all particulars conform to all other provisions of the order; and that such special supplement may be issued and filed amending schedules containing rates to become effective upon a later date and those which have not been in effect for 30 days.

Carriers are permitted to file regular supplements to freight tariffs which shall explicitly publish the increased freight rates in manner and form required by section (i) of Rule 4 of Tariff Circular 18-A, without regard to the number of, or volume of, the effective supplements to the tariffs thus supplemented.

Such special supplement may be designated as supplement to one or more tariffs, including loose-leaf tariffs and tariffs of less than five pages when desirable, may be filed without regard to the number of, or the volume of, the effective supplements to the tariff thus supplemented, and need not specifically name carriers participating therein or show power of attorney or concurrence forms and numbers.

Each special supplement shall be posted with each tariff to which it is supplemented, and may not contain any matter other than the provisions for increasing freight rates and charges referred to; and no special supplement, issued in the form authorized, shall at any time be reissued in like form unless authorized by special permission of the commission;

Unless otherwise authorized by the commission, no subsequently filed supplement to a tariff may be made subject to the rules or rates contained in the special supplement, and each subsequent supplement shall bear at top of its title page the following notation in bold type, viz: "Rates and charges named in this supplement are not subject to increases shown in Special Supplement No. _____."

Except as otherwise provided supplements to tariffs issued and filed subsequent to the filing of the special supplement shall conform in all particulars with the commission's rules and regulations, provided, that a rate or rates reissued from a previous supplement shall be revised so as not to change such rates as applicable under the special supplement and shall be shown as reissued items in the customary manner, the effective date of such reissued item or items to be the date upon which the change was effected by the special supplement.

Carriers or agents whose tariffs are supplemented hereunder, are required to reissue not less than 16 2⁄3 per cent of the number of pages contained in all tariffs supplemented under authority of this special permission within three months from September 1, 1920, and to reissue not less than the same number of pages of said tariffs each three months thereafter until all tariffs so supplemented shall

have been reissued, and each carrier and agent, on or before October 1, 1920, shall report the total number of pages in tariffs supplemented under authority of this special permission, and shall report each three months thereafter, the number of pages of said tariffs as to which the special supplement has been cancelled in full.

The form of special supplement as authorized is as follows:

EXHIBIT "A" (Title Page)

SPECIAL SUPPLEMENT TO TARIFFS

Issued by
(Name of carrier, carriers or agents.)

APPLYING IN CONNECTION WITH

PARTICIPATING CARRIERS SHOWN IN TARIFFS AND SUPPLEMENTS THERETO ENUMERATED HEREIN

Increase in Rates

Rates named in tariffs and supplements thereto, listed on pages to, inclusive, are hereby increased to the rates shown in Column B of rate tables on pages to, inclusive.

(See Application of Rates, Page 2)

This schedule contains rates that are departures from the terms of the amended Fourth Section of the Interstate Commerce Act, under authority of Interstate Commerce Commission, Fourth Section Order No. 7700 of August 4, 1920.

Rates shown in tariffs supplemented hereby published under authority of outstanding orders of the Interstate Commerce Commission are included herein under authority of order of the Interstate Commerce Commission in Docket No. 74 (Ex Parte), dated July 29, 1920.

Rates shown in tariffs supplemented hereby, published under authority of released rate orders heretofore approved by the Interstate Commerce Commission, increased as herein provided, are approved under authority of Released Rates Order No. 149 of July 28, 1920. This order must not be construed as approving under the 20th Section of the Interstate Commerce Act, rates based on value of the commodity shipped, which have not been approved by the Commission.

The form of this supplement is permitted by authority of Interstate Commerce Commission, Special Permission No. 50340 of August 5, 1920. The increased rates and charges shown herein are established on five days' notice under authority of the opinion of the Interstate Commerce Commission in Ex Parte No. 74.

Issued:

Effective

Issuing Officers or Agents.

(Page 2)

APPLICATION OF RATES

Effective, 1920.

Class and Commodity rates.

Charges for switching, transit (including stopping cars to partially load and unload), weighing, diversion, reconignment, lighterage, floatage, storage (not including track storage), and transfer, then in effect, named in tariffs enumerated herein and in prior supplements thereto, as indicated, to each of which tariffs this is a special supplement, are increased to the rates shown in Column B in Table of Rates on Pages to, inclusive, hereof, except as otherwise provided below.

If a tariff or a prior supplement to a tariff enumerated herein contains rates to become effective upon a later date as indicated thereon, such rates will, on such later effective date, be increased to the rates shown in Column B in the Table of Rates, except as otherwise provided below.

If a tariff or a prior supplement to a tariff enumerated herein contains arbitraries, differentials or local rates to be used in connection with base rates, the table of increased rates shall be applied to each of such factors in determining the increased total rates.

EXCEPTIONS

Where a tariff, or a prior supplement to a tariff enumerated herein, provides for the absorption, in whole or in part, of another carrier's charges for the special services enumerated above, the amount of the absorption will be increased by the amount that the charge for the service is increased.

This supplement does not increase:

Rates on iron ore from Minnesota or Michigan ranges to Lake Superior or upper Lake Michigan ports;

The minimum charge of 50 cents per shipment for less-than-carload traffic;

The minimum charge of \$15.00 per car, on carload traffic;

The minimum scale for class rates;

The charges for special services not enumerated above.

RULES.

(Rules 1 to 7 inclusive are subject to Rule 8.)

RULE 1—RATES IN CENTS (EXCEPT CENTS PER CAR)

Where rate is stated in cents per hundred pounds, per package, per ton, per shipment or other unit (except rates in cents per car—see Rule 6) find such rate in Column A and apply the rate shown opposite thereto in Column B.

RULE 2—RATES IN DOLLARS PER HUNDRED POUNDS

Where rate is stated in dollars or fractions of a dollar, or dollars and cents, per hundred pounds, use the equivalent in cents per hundred pounds, find such equivalent in Column A and apply the rate shown opposite thereto in Column B.

RULE 3—RATES IN DOLLARS (EXCEPT PER HUNDRED POUNDS, PER TON OR PER CAR)

Where rate is stated in dollars or fractions of a dollar, or dollars and cents, per unit (other than per hundred pounds, per ton or per car—see Rules 2, 4 and 5, respectively), use the equivalent in cents per unit, find such equivalent in Column A and apply the rate shown opposite thereto in Column B.

RULE 4—RATES IN DOLLARS PER TON

Where rate is stated in dollars or fractions of a dollar, or dollars and cents, per net or gross ton, use the equivalent in cents per net or gross ton; find such equivalent in Column A and apply the rate shown opposite thereto in Column B.

Example: (May be shown in accordance with increases as authorized by the Commission.)

RULE 5—RATES IN DOLLARS PER CAR

(a) Where rate is stated in dollars or fractions of a dollar, or dollars and cents, per car, regardless of weight, use the figures in Column A as expressing dollars and fractions thereof, or dollars and cents and apply the rate shown opposite thereto in Column B.

Example: (May be shown in accordance with increases as authorized by the Commission.)

(b) Where rate is stated in dollars or fractions of a dollar or dollars and cents per car of a specified weight and it is provided that excess weight will be charged for in proportion first determine the increased per car charge by the method shown in Rule 5 (a) and then determine the charge on the actual weight by the following method:

If an increased rate of \$38.00 applies per car of 20,000 pounds the charge for a car of 26,000 pounds will be 26,000/20,000 of the rate for 20,000 pounds, thus \$38.00 x 26/20 equals \$49.40, and under Rule 8 (b) the charge for a car of 26,000 pounds is \$49.50.

RULE 6—RATES IN CENTS PER CAR

(a) Where rate is stated in cents per car regardless of weight, find the equivalent in dollars, or dollars and cents in Column A, as expressing dollars or fractions of a dollar, or dollars and cents, and apply the rate shown opposite thereto in Column B.

Example: (May be shown in accordance with increases authorized by the Commission.)

(b) Where rate is stated in cents per car of a specified weight and it is provided that excess weight will be charged for in proportion, first determine the increase per car charge by the method shown in Rule 6 (a), and then determine the charge on the actual weight by the following method:

If an increased rate of \$64.50 applies per car of 20,000 pounds, the charge for a car of 26,000 pounds will be 26,000/20,000 of the rate for 20,000 pounds, thus \$64.50 x 26/20 equals \$83.85, and under Rule 8 (b) the charge for a car of 26,000 pounds is \$84.00.

RULE 7—RULE FOR ARRIVING AT RATES HIGHER THAN SHOWN IN RATE TABLE

Where rates are higher than found in Column A, such rates will be increased the per cent shown in connection with the rate table applicable, observing Rules 1 to 6, inclusive, and Rule 8 in obtaining the increased rates.

RULE 8—RULES FOR DISPOSITION OF FRACTIONS

In computing or applying all increased rates as provided for herein, fractions will be disposed of as follows:

(a) Where rates are stated in amounts per 100 pounds or any other unit, except as provided in the succeeding paragraph, fractions of less than $\frac{1}{4}$ of a cent will be omitted. Fractions of $\frac{1}{4}$ of a cent or greater, but less than $\frac{1}{2}$ of a cent will be stated as $\frac{1}{2}$ cent. Fractions of $\frac{1}{2}$ of a cent or greater will be increased to the next whole cent.

(b) Where rates are stated in dollars per carload, including articles moving on their own wheels, when not stated in amounts per 100 pounds or per ton, amounts of less than 25 cents will be dropped; thus, \$25.24 will be stated as \$25. Amounts of 25 cents or more, but less than 75 cents will be stated as 50 cents; thus, \$25.65 will be stated as \$25.50. Amounts of 75 cents or more, but less than \$1 will be raised to the next even dollar.

(Page 4 and subsequent pages)

TABLE OF RATES

Subject to application of rates and to rules, pages and

A		B
Over	But not over	
.....
.....
.....

When rates are higher than found in Column A, such rates will be increased as per Rule 7.

(Add lists of tariffs by I. C. C. numbers to which this is a special supplement, followed by the special supplement numbers, and the numbers of supplements subject to the special supplement. Other Commissions' and carriers' serial numbers may be shown.)

The Interstate Commerce Commission has ordered the railroads to put their tariffs in shape for applying the new percentage increases without too much confusion. General Order No. 28 of the director general of railroads, directed carriers under federal control to increase fares and rates on passenger and freight traffic, effective June 10 and June 25, 1918, respectively, and responsive to requests, therefore, the commission on May 27, 1918, issued special permissions authorizing carriers to file special supplements establishing the increases without observing the requirements of cer-

tain of its published rules. There are at present a considerable number of tariffs of various carriers that have not been reissued, and it is difficult, if not in some instances impossible, to make changes in the tariffs so long as such special supplements are continued in force.

Therefore, all carriers throughout the United States having in effect tariffs amended by such special supplements, were directed to forthwith reissue said tariffs, filing copies of the new tariffs cancelling them effective not later than September 1, 1920, without change in rates, rules or regulations.

Because the general increases in freight and passenger rates cannot be published and made effective in the manner authorized without producing in some instances rates, fares or charges that yield greater compensation in the aggregate for a shorter than for a longer distance, in contravention of the fourth section, the Interstate Commerce Commission has issued an order authorizing the carriers to increase the rates by the percentages stated in its order in Ex Parte 74 without observing the provisions of the fourth section, until November 1, 1920.

Passenger Service Tickets

Proposals for the disposition of passenger service tickets in connection with the increases in fares which are to go into effect on August 26, when purchased before the effective date of the advance, have been submitted to the Interstate Commerce Commission by the Association of Railway Executives as follows:

One-way tickets sold prior to August 26, 1920, held by passengers en route August 26, 1920, will be honored to destination without additional charge.

Partially used round trip or tourist tickets sold prior to August 26, 1920, will be honored to destination in accordance with tariff under which sold.

Passengers actually en route at midnight August 25, 1920, will be carried to destination of sleeping or parlor car ticket without additional charge. Surcharge will apply in connection with all one-way and round trip tickets of every kind where sleeping or parlor car space is purchased for use on or after August 26, 1920.

Outstanding sleeping or parlor car tickets covering space to be used on or after August 26, 1920, will be honored only upon payment of the surcharge.

Commutation or other multiple forms of tickets sold prior to August 1, 1920, will be honored within their limits.

Commutation and other multiple forms of tickets bearing calendar month limit or limit not exceeding 35 days from date of sale, sold on or after August 1, 1920, and prior to August 26, 1920, will be honored within their limits.

Commutation or other multiple forms of tickets bearing longer limits than the calendar month or exceeding 35 days from date of sale, sold on or after August 1, 1920, and prior to August 26, 1920, will not be honored on or after August 26, 1920, but such tickets, if wholly unused, will be redeemed at fare paid, and if partially used will be redeemed at proportionate fare.

Tickets of any class sold prior to August 1, 1920, must not be dated ahead for use on or after August 26, 1920, unless the increased fares are collected; surcharge must also be collected where sleeping or parlor car space is used.

Milk and cream tickets purchased prior to August 26, 1920, will not be honored on or after that date, but will be redeemed at face value on presentation to general passenger department.

The commission on August 9 also issued another special permission order authorizing the carriers to file master tariffs and special supplements to passenger tariffs to provide for the changes in fares, and charges, excess baggage rates and milk and cream rates approved by the commission in the

general rate case. The master tariff and special supplements are to be issued substantially in the manner and form prescribed by the commission in an exhibit attached to the order, which provides for a table of rates similar to that to be used for freight tariffs. The master tariff will refer by number to all existing tariffs to which the increases are to be applied and is to be posted at each station at which a tariff referred to is posted. The commission also issued a special permission order applying the percentages of increases which are to be applied on freight traffic in the different territories to the reconsignment charges authorized in its order issued on July 3 authorizing new reconsignment rules.

Additional Loans Recommended for Equipment and Facilities

WASHINGTON, D. C.

THE ASSOCIATION of Railway Executives, which on June 26 submitted to the Interstate Commerce Commission the preliminary report of its special committee making recommendations requested by the commission as to the applications of various carriers for loans from the \$300,000,000 loan fund provided by the transportation act, has now submitted a revised report including recommendations for loans to additional carriers and in some instances for increased loans to the same roads. The total amount of recommended loans for additions and betterments to existing equipment is increased from \$7,062,053 to \$8,317,943, by the addition of the following: Chicago & Eastern Illinois, \$385,940; additional amount for Chicago Great Western, \$270,000; Gulf, Mobile & Northern, \$256,050; Maine Central, \$65,900; Norfolk Southern, \$78,000; Wabash, \$200,000.

It is stated that the expenditure of the total of these recommended loans, namely, \$8,317,943, will restore to efficient service 14,768 cars and locomotives.

Under the head of additions and betterments which will definitely and specifically promote the movement of cars, the following new recommendations have been made, which increased the total from \$35,050,289 to \$78,349,289:

Ann Arbor	\$275,000
Terminal facilities, extensions to existing side tracks, turn table.	
Baltimore & Ohio	5,000,000
Additional main tracks, yard tracks, sidings, interlockers, telephone train despatching, shop machinery, bridges, trestles, culverts, heavier rail.	
Boston & Maine	2,188,564
Retaining walls and rip rapping, renewal of bridges, automatic signals, extension to sidings, interlockers, improved water supply, engine house and yard facilities.	
Chicago & Eastern Illinois	502,060
Shop machinery, improvements to trestles.	
Chicago Junction Ry.	1,100,000
Yards and car shop.	
Chicago, Milwaukee & St. Paul	4,940,000
Ballast, rail, bridges, yard tracks, and sidings, fuel stations, water stations, shop buildings, shop machinery and tools, track elevation.	
Chicago, Rock Island & Pacific	5,000,000
Additional yard tracks and sidings, shop machinery and tools, ballast, bank widening rails, bridges.	
Evansville, Indianapolis & Terre Haute	200,000
Bridges, rails, ties, ballast.	
Gulf, Mobile & Northern	72,000
Ballasting.	
International & Great Northern	40,000
For 90-lb. rail.	
Louisiana & Arkansas	165,660
Tools, shop extension, tie plates, yard and passing tracks, heavier rail.	
Louisville & Jefferson Bridge	162,574
Additional yard tracks, coaling station, water station, ash pit, heavier rail and bin.	
Maine Central	533,132
Heavier rails, ballast, shops, shop machinery and renewal of bridges.	
Missouri Pacific	2,843,179
Rails, bridges, trestles, additional yard tracks, signals and interlockers, telegraph and telephone lines, fuel and water stations, shop buildings, engine houses, shop machinery, tools, wharves, and docks.	

New York Central Lines.....	12,101,928
allocated as follows:	
New York Central (including Boston & Albany) Railroad.....	\$5,500,000
Engine terminals and facilities, freight yards and yard facilities, sidings and extensions, interlockers, shop machinery, and miscellaneous betterments.	
Michigan Central.....	613,221
Passing tracks, repair tracks, storage tracks, yard tracks, and engine terminals.	
Rutland RR.....	61,198
Bridges, rebuilding swinging bridge at Fort Ticonderoga.	
Indiana Harbor Belt RR.....	526,400
Round house, tools, yard tracks and passing tracks	
Cleveland, Cincinnati, Chicago & St. Louis..	4,560,101
Double tracking, passing and storage tracks, shop tools, machinery and signals.	
Zanesville & Western RR.....	60,100
Engine terminal and yard tracks.	
Kanawha & Michigan Ry.....	231,204
Passing sidings and cutoff.	
Lake Erie & Western.....	242,700
Passing tracks, interlockers, shop machinery and tools, engine house stalls.	
Toledo & Ohio Central RR.....	214,454
Yard tracks, passing tracks, yard facilities, shop tools and machinery.	
Cincinnati Northern.....	92,550
Passing tracks, interlockers, tools.	
Pennsylvania.....	6,780,125
Grain elevator, engine house facilities, yard tracks, shops.	
Seaboard Air Line.....	750,000
Ballasting, trestles, rail renewals, dredging, shop machinery facilities, water facilities, passing and yard tracks.	
Tampa Northern.....	57,000
Heavier rails and additional tracks.	
Wabash.....	191,225
Strengthening of Bridges for heavier power.	

Under the head of freight and switching locomotives, additional recommendations have been made, which increase the total from \$26,868,629 to \$29,054,323, as follows:

Fort Smith & Western.....	\$75,000
International & Great Northern.....	312,500
Maine Central.....	209,200
Missouri, Kansas & Texas.....	1,050,000 (estimated)
Missouri Pacific.....	97,250
Wabash.....	162,500

The total of the proposed loans as revised will enable the carriers to add 636 freight locomotives and 277 switching locomotives having a total value of \$58,108,646.

The total for the purchase of refrigerator and other needed freight train cars was increased from \$52,260,537 to \$52,839,493 by additional recommendations as follows: International & Great Northern, \$750,000; Maine Central \$58,030. The recommendation for the Southern Pacific was reduced from \$6,331,774 to \$6,102,500. The total of these proposed loans as revised will enable the carriers to add 46,027 freight train cars at an approximate value of \$146,646,510.

As recommended by the committee in previous reports, the Interstate Commerce Commission has set aside temporarily a reserve of \$50,000,000 for the purpose of assisting carriers in meeting maturities, when necessary to protect the solvency of companies. The committee reaffirms its previous position on this subject, but if any carrier is unable to meet its maturities, and has made without success every proper effort to secure an extension or refunding without assistance, the committee is prepared to recommend to the commission a loan not exceeding one-fourth of the total of the amount of the maturing obligation.

Provided the remainder of the maturing obligations of the following companies are effectively financed, it recommends the following loans to enable the following companies to meet their maturing obligations:

Atlanta, Birmingham & Atlantic.....	\$200,000
Buffalo, Rochester & Pittsburgh.....	496,750
Carolina, Clinchfield & Ohio.....	2,000,000
Erie.....	5,879,125
Great Northern.....	5,000,000
Great Northern.....	10,000,000
Missouri Pacific.....	1,454,000
Seaboard Air Line.....	2,921,000
Tampa Northern.....	100,000
Trans-Mississippi Terminal.....	750,000
	\$28,800,875

The committee also submitted a recapitulation as follows:

1. Sum allocated by commission for loans to aid in acquisition of freight and switching locomotives.....	\$50,000,000
2. Less loans recommended for above purpose by committee's report, dated July 28, 1920.....	29,054,323
3. Balance unappropriated July 28, 1920, should commission act favorably on above recommendations.....	\$20,945,677
4. Sum allocated by commission for loans to aid in acquisition of refrigerator and other freight train cars.....	\$75,000,000
5. Less loans recommended for above purpose by committee's report dated July 28, 1920.....	52,839,493
6. Balance unappropriated July 28, 1920, should commission act favorably on above recommendations.....	22,160,507
7. Sum allocated by commission for loans for additions and betterments to promote movement of cars.....	\$73,000,000
8. Less loans recommended for above purpose by committee's report dated July 28, 1920.....	78,349,389
9. Debit balance July 28, 1920, should commission act favorably on above recommendations.....	5,349,389
10. Sum allocated by commission for loans to aid carriers in meeting maturing obligations.....	\$50,000,000
11. Less loans made and recommended for above purpose (including Boston & Maine \$5,000,000).....	33,800,875
12. Balance unappropriated July 28, 1920, should commission act favorably on above recommendations.....	16,199,125

The original recommendations of the committee were published in the *Railway Age* of July 2 on page 31. The commission has already acted on a number of the applications. On August 11 it announced that it approved a loan to the Delaware & Hudson of \$1,125,600. This item was included in the previous recommendation of the committee and is for the elimination of a tunnel and the development of two yards.

The Treasury Department has issued detailed regulations to be observed by carriers applying to the Secretary of the Treasury for loans approved by the Interstate Commerce Commission under authority of Section 210 of the transportation act and also for advances on account of their guaranty under authority of Section 209.

Extra Large Condulets

TO MEET THE DEMAND for a conduit having an unusually long cover opening and large wiring chamber, the Crouse-Hinds Company, Syracuse, N. Y., has designed a new series known as the Mogul condulets. These are designed to avoid kinking heavy wires or cables when pulling in or feeding through a conduit system, and to afford ample space for making splices or taps. Though liberal in their proportions they do not materially affect the general outline of the conduit system. Their hubs have integral bushings and tapered threads. Fastening screw holes are located at the ends of the cover openings.

Mogul condulets are made in eight types, each type in eight conduit sizes ranging from one to four inches. There are four sizes of composition and cast iron covers, each size being common to two sizes of conduit bodies. The composition covers are made with from one to nine wire holes, or blank covers are furnished which can be drilled by the user as required. The cast iron covers are made in two types; with gasket, or without gasket. The gasket is made of round rubber, cemented into a groove in the cover. The cover fastening screws are furnished with and secured to the cover.

With a view to the electrification of the Chemin de Fer du Midi, preliminary work is being done, says Commerce Reports, on the harnessing of the waterfalls in the Valley of Ossau. In order to obtain the maximum water power, a system of three falls is planned. The cost of the work is estimated at 100,000,000 francs, and the project will be completed within five years.

General News Department

The International Railway General Foremen's Association will hold its seventeenth annual convention at the Hotel Sherman, Chicago, September 7-8-9-10, 1920.

C. D. Young, general supervisor of stores of the Pennsylvania, has been appointed representative for the American Society of Testing Materials on Engineering Council, succeeding Albert Ladd Colby.

Sugar to the amount of about 300 tons—value about \$120,000—was sunk in the East River, New York City, on August 10, when a float belonging to the Eastern District Terminal Company, carrying 13 cars, went down near the pier of the National Sugar Refining Company.

The Interstate Commerce Commission has ordered Class I railroads to file with it quarterly reports giving particulars of the number of employees of various classes in the service at specified times, of the service rendered by such classes of employees and of the compensation paid for that service.

Aero Limited, proprietor of the "First Aerial Passenger Route in America," reports that for the month of July it carried 700 passengers. Rates for passage are: New York to Boston, \$150; New York to Albany, \$100; New York to Newport, \$85 (for commuters, \$45), and to other places in proportion. A ride of half an hour over Manhattan and New York Bay costs \$25.

A national conference on engineering employment sponsored by the American Association of Engineers will be held in Chicago on November 12, for the discussion of industrial relations problems affecting employes and engineers. Employment managers of large industries, employers of technical men and the free employment bureaus will be invited to send representatives to this conference.

The Canadian Pacific ocean service to China and Japan, Manila and Singapore is to be enlarged by the addition of the S.S. *Mat-tawa*, formerly in the Atlantic trade. This makes a total of six steamships in oriental service, aggregating 60,000 tons gross, with approximately three sailings a month. A feature of this service is the issuance of through bills of lading from shipping points to ultimate destination, thereby eliminating the usual trouble of arranging these at the seaport.

Alba B. Johnson, president of the Railway Business Association, has sent to Chairman Clark of the Interstate Commerce Commission a telegram heartily congratulating the commissioners on their promptness and vigor in deciding the rate advance case. The commission is congratulated on faithfully carrying out the purpose of Congress to rehabilitate railroad credit and on its wisdom in fixing the basis of income at six per cent rather than five and one-half.

Near Englewood (Chicago) on the evening of August 9, a lone negro bandit attempted to hold up the dining car steward on Pennsylvania train No. 19, west bound. It was shortly after the train pulled out of the station. The negro boarded the diner as the train left Englewood and confronted the steward as he was transferring money to a cash box. The steward was seriously wounded in struggling with the negro, who escaped without securing any money.

Road building projects to the number of 2,985 involving a total of 29,319 miles of road had been approved by the Secretary of Agriculture up to June 30, according to a statement issued by the Bureau of Public Roads. The preliminary estimate of the cost of these projects is approximately \$384,900,000, of which approximately \$163,841,000 will be provided by the Federal government. On the same date, 2,116 projects, representing approximately 15,944 miles, had either been com-

pleted or were under construction. The estimated cost of these roads is \$200,000,000. In all, Federal funds to the amount of \$266,750,000 have been apportioned among 48 states to assist in good roads construction on an approximately 50-50 basis.

John Grunau, president of the Chicago Yardmen's Association, who, with H. E. Reading, chairman of the United Enginemen's Association, and 39 others, leaders of the so-called "outlaw" strikers, were indicted by the Federal Grand Jury last week at Chicago, have been in Washington trying to get support from the government in their efforts to secure reinstatement without loss of seniority rights. They called at the White House, but were unable to see the President's secretary, who was out of the city. They were referred to the Department of Labor and then to the United States Board of Mediation and Conciliation. Members of this board were not present and the delegation was informed by the secretary that it would be necessary to file a formal application asking for consideration of their claims. W. L. McMenimen, assistant president of the Brotherhood of Railroad Trainmen, notified the board that the trainmen's organization was in no way a party to the appeal.

Illinois Central Seeks Constructive Criticism

Sixty-five thousand shippers who use the Illinois Central are being asked by President Charles H. Markham to make constructive criticisms of the road's service and facilities. After frankly admitting that, owing to the war, its service has not been perfect, President Markham, in his circular, says:

"We believe that the obstacles in the way of the expansion from this time on have sufficiently cleared to justify the statement that the Illinois Central system, in the course of a comparatively short time, will have its facilities restored and enlarged to such an extent that it will be able to render you service 100 per cent efficient."

The letter urges patrons to attempt to solve their difficulties by making complaints direct to the president, instead of to the Interstate Commerce Commission, asking the commission for a remedy only as a last resort.

Rate Clerks Wanted at Washington

The United States Civil Service Commission announces that the recently authorized general increase in freight and passenger rates will require the Interstate Commerce Commission to add scores of freight and passenger rate clerks to its present force; and examinations will be held throughout the country on September 22 and October 20 for tariff examiners. The usual entrance salary is \$1,620 a year, besides which appointees whose services are satisfactory will be allowed the increase of \$20 a month granted by Congress.

The Civil Service Commission also says that, while the civilian force of the Government is steadily diminishing, there is a constant shortage in various departments of eligibles who are trained in both stenography and typewriting. About 300 stenographers are needed at once. The entrance salary offered is \$1,200 a year, besides which appointees whose services prove satisfactory are promptly given the increase of \$20 a month granted by Congress.

New York Commission Proposes Automatic Stops

The New York State Public Service Commission, Second District, announces that, being impressed with the immediate necessity for additional protection for trains, it has requested the New York Central to make an experimental installation of some automatic device, the purpose of which shall be to

safeguard the trains when they are not so controlled as to prevent collisions and certain classes of derailments.

In order that the best available device may be promptly selected for trial and the installation thereof on a section of the railroad made as speedily as possible, a joint committee has been appointed to make recommendations to the Commission. This committee will be composed of George R. Van Namee, commissioner; Charles R. Vanneman, chief, and James J. Gill, inspector of equipment, Division of Steam Railroads; and the following from the railroad: W. H. Elliott, signal engineer exterior zone; H. S. Balliet, signal engineer electric zone, and T. L. Burton, consulting expert on air brakes.

Fairfax Harrison on the Rate Increase

Fairfax Harrison, president of the Southern Railway, in commenting on the rate advance, made the following statement:

"The tremendous increase of railroad rates authorized by the Interstate Commerce Commission seems to complete the circle of Government management of the railroad industry. It was necessary to carry the scale of expenses set up by the railroad administration but it must cause grave concern as to its economic consequences. It now remains for private management to resume the practice of competitive efficiency and self-reliant initiative which distinguished the American railroads during so many years and to justify the preference of the American people for that form of administration by making possible not only the success of individual companies and the prosperity of their loyal employees but a constant and progressive reduction of rates accomplished by an enlargement of service to the public such as may be traced through the old fashion railroad statistics. No one can expect this to be accomplished over night, considering the practical conditions, but a start can be made at once. . . ."

Telegraph & Telephone Division—A. R. A.

J. E. Fairbanks, general secretary, announces the annual meeting of the Telegraph & Telephone Division of the American Railroad Association to be held at the Fort Garry Hotel, Winnipeg, Manitoba, on Wednesday, Thursday and Friday, September 22, 23 and 24. The first business will be the consideration of the report of a special committee on future activities, of which G. A. Cellar (Pennsylvania), is chairman. Other reports are those of the committees on: Construction & Maintenance—outside plant; Construction & Maintenance of Pole Lines; Wire Crossings; Underground Construction; Transpositions; Construction & Maintenance—inside plant; Protection Against Electrolysis; Protection Against Lightning and Foreign Currents; Telegraph and Telephone Developments; Message Traffic; Inductive Interference.

The committee on nominations submits the following names: for chairman, H. Hulatt (G. T. R.); for first vice-chairman, W. H. Hall (M. K. & T.); for second vice-chairman, E. L. King (S. P.).

The notice is accompanied by copies of the reports which are to be presented, and J. F. Caskey, chairman of the division, requests members to send their comments and criticisms, in writing, to the chairmen of the proper committees at least three weeks before the meeting.

Prizes to Station Agents

The correspondent, referred to in the editorial columns, who proposes premiums for efficiency in moving freight cars, is not a representative of the Southern Pacific, and he does not live in the South, but the point that he makes is reinforced, in concrete form, by an item in the Southern Pacific Bulletin (Houston, Texas), for August, just received, which gives the names of eleven agents of that road in Texas and Louisiana to whom the company has just sent gratuities of \$25 each. These agents are: J. O. Jones, Bremond; N. Hicks, Goliad; O. R. Estes, Humble; O. C. Martin, Kaufman; C. McGarr, Lacoste; L. A. Veazey, Lake Charles; A. J. Mc-

Intire, Midland; C. O. Barnes, New Iberia; O. L. Erwin, Paige; W. W. Read, San Antonio; A. Boone, Fabens. The prizes were awarded by a committee composed of F. M. Lucore, superintendent of transportation, chairman; M. H. Bonner, chief special agent; H. M. Moors, freight claim agent; C. G. Webb, freight claim agent; F. H. Bednark, assistant superintendent; H. J. Micksch, superintendent.

From the letter sent with the prizes it appears that the award is based on records in carloading efficiency. The committee "aims to bring to the forefront the work of those in station service who perform their daily duties with earnestness, enthusiasm and good judgment."

Continuing, the letter says: "Each member of the committee hopes you will derive as much pleasure in accepting this money as the committee derives in sending it. * * * The management always appreciates good work on the part of employees and entertains a most cordial regard for those who perform their duty in a high-grade way, no matter what particular position they chance to occupy. * * * The award system bids fair to expand in a way which will bring agency work into new prominence and afford employees new incentive for exhibiting the skill they unquestionably possess. You are to be complimented on the good showing you have made at the inception of the plan.

"It is planned, also, to make an award to the agent who operates his station in the most approved way, taking the system as a whole."

Hearing on Express Contract

Testimony was heard on August 6 by Examiner Barclay of the Interstate Commerce Commission on the proposed form of contract between the railroads and the American Railway Express Company, which provides for a new method of dividing the expenses and earnings, and which was submitted to the commission for its approval, inasmuch as it deals with the railroads by groups and also because there is some thought that this plan of contract would come within the pooling provision of the transportation act. Representatives of the Association of Railway Executives urged approval of the proposed form of contract on the ground that it offers the only practicable solution at the present time and that it would be very dangerous to complicate the present serious transportation situation by allowing any possibility that there should not be an organized agency for handling the express business after September 1, when the present contracts expire. C. R. Gray, president of the Union Pacific, was the principal witness for the Association of Railway Executives, of whose members 94 have approved the contract, 14 have disapproved it and six have reserved their vote. Alfred P. Thom, counsel for the association, said that many roads did not consider the contract the best business arrangement that could be made, but believe that it should be tried for a time.

Representatives of the Chicago & Alton, the Central of New Jersey, the Erie and the Wabash appeared to object to certain forms of the contract. S. G. Lutz, vice-president of the Alton, said that the contract is so inequitable that it cannot be satisfactory in the long run either to the railroads, the express company or to the public, and that the former percentage form of contract was a much better arrangement. Mr. Thom asked what the Alton would do for express service after September 1, to which Mr. Lutz replied that he had received no notice from the express company that it would quit doing business on that date and he thought there would be no difficulty in arranging a temporary contract. W. H. Williams, chairman of the Wabash, also pointed out objections to the contract which he thought were serious. He would be satisfied if assured that the control of the express company were to remain where it now is, but in other hands the contract might be made to work out most unfairly.

Mr. Williams had filed a petition with the commission contending that the commission has jurisdiction to examine the contract as one of the terms and conditions of any order approving the consolidation of the express company and to require inclusion of things which will insure ample protection to the parties. The objection of the Wabash to the contract is that in effect the railroads were required to guarantee the express company against loss, while yet they would have no control or voice in the management. He also made the point that the contract would permit the express company to earn more than the amounts assured to railroads by the law.

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JUNE, 1920

Name of road.	Average mileage operated during period.	Operating revenues			Maintenance of way and structures			Operating expenses			Net from railway operation.	Railway tax accruals.	Operating income (or loss), last year.	Increase (or decrease), last year.
		Freight.	Passenger.	Total (inc. misc.).	Way and structures.	Traffic.	General.	Total.	Operating ratio.					
Alabama & Vicksburg.....	141	\$163,394	\$67,086	\$254,739	\$42,093	\$5,688	\$10,334	\$198,546	77.94	\$56,194	\$14,251	\$41,942	\$45,952	
Ann Arbor.....	301	323,891	57,026	409,519	69,945	92,912	22,750	383,902	92.50	23,617	17,500	8,115	-16,241	
Arizona Eastern.....	381	271,506	52,059	359,241	70,617	7,428	22,570	213,585	59.45	145,656	93,716	51,940	4,871	
Atchafalaya, Topeka & Santa Fe.....	8,723	10,203,707	4,780,516	16,321,964	2,700,185	208,495	329,094	13,237,239	81.10	3,084,726	909,947	2,174,038	-159,094	
Atlanta & W. Point.....	93	116,817	96,102	240,851	35,449	9,477	15,983	221,531	91.98	19,392	8,928	10,392	-1,931	
Atlanta, Birm. & Atlantic.....	639	345,831	467,558	113,001	136,201	20,965	266,338	582,258	119.39	-90,699	17,320	-108,063	33,639	
Atlantic City.....	177	88,470	296,938	409,392	58,214	3,910	21,012	330,726	80.79	78,665	14,520	64,143	-31,557	
Atlantic Coast Line.....	4,889	3,740,855	1,280,715	5,502,052	1,021,333	65,460	30,018	5,619,523	102.13	-117,468	17,654	-867,929		
Baltimore & Ohio Chicago Terminal.....	90	.....	.....	.....	71,283	1,180	140,954	292,533	199.41	145,833	31,169	177,002	-123,649
Baltimore & Ohio.....	5,153	13,708,819	2,543,846	17,584,907	2,745,011	197,899	7,972,263	16,801,505	95.54	783,402	1,066,692	-288,835	-2,128,508	
Baltimore, Chesapeake & Atlantic.....	87	74,035	40,013	122,034	16,200	1,485	83,520	159,895	131.02	37,861	3,700	-31,561	23,928	
Bangor & Aroostook.....	658	392,454	78,829	471,283	141,541	5,057	23,054	533,613	107.20	-35,854	26,430	-62,284	-59,271	
Beaumont, Sour Lake & Western.....	118	117,406	31,272	155,554	29,417	3,408	5,967	116,680	75.00	38,875	2,850	36,022	66,576	
Belt Ry. Co. of Chicago.....	31	.....	.....	.....	42,237	741	193,088	8,852	88.07	38,367	24,767	13,600	-60,768
Bessemer & Lake Erie.....	225	1,412,040	35,412	1,447,452	346,965	14,230	42,713	1,005,011	68.14	469,838	15,800	454,037	-42,333	
Birmingham & Garfield.....	36	154,150	1,669	157,486	34,582	2,263	35,123	112,819	71.63	44,668	7,425	37,242	96,904	
Birmingham Southern.....	31	40,608	55,536	96,144	10,795	3,319	4,006	50,482	90.80	5,054	1,754	3,299	-439	
Boston & Maine.....	2,304	4,936,158	1,932,253	7,600,946	1,017,155	49,267	3,979,813	6,681,402	87.90	919,544	237,185	672,911	-90,020	
Brooklyn Eastern District Terminal.....	96	417	.....	417	11,403	.....	4,267	87,985	84.49	16,146	6,033	10,113	39,275
Buffalo & Susquehanna R. R. Corp.....	296	202,063	6,391	212,136	65,641	2,217	72,344	255,482	120.43	-43,346	5,200	-46,546	-5,408	
Buffalo, Rochester & Pittsburgh.....	589	1,456,511	140,302	1,672,629	393,541	16,580	886,249	1,963,481	117.38	-290,853	35,000	-325,853	-37,380	
Canadian Pac. (Lines in Maine).....	233	148,295	35,397	197,337	78,501	2,838	96,904	233,237	118.19	-35,899	12,200	-48,099	26,542	
Central New England.....	301	608,748	23,588	632,336	172,423	3,358	340,417	632,690	99.06	6,152	18,225	-12,072	8,517	
Central of Georgia.....	1,924	1,279,845	540,430	2,288,650	328,429	63,208	1,048,935	2,151,387	106.05	-122,737	80,251	-203,044	-345,182	
Central of New Jersey.....	686	3,191,855	766,539	4,228,777	469,038	32,640	2,067,033	3,585,417	83.93	686,364	264,856	421,508	-159,489	
Central Vermont.....	413	301,258	97,973	453,457	109,106	7,307	33,054	622,889	137.36	-169,433	17,400	-186,832	-100,085	
Charleston & Western Carolina.....	342	194,251	52,425	261,164	62,752	15,521	4,837	285,256	109.22	-24,693	11,625	-35,718	18,515	
Chesapeake & Ohio.....	2,520	5,629,023	973,201	7,089,678	1,112,639	88,839	3,002,647	5,861,616	96.78	228,062	229,810	-1,702	-1,215,442	
Chicago & Alton.....	1,050	1,722,563	611,492	2,504,936	404,977	50,892	61,011	2,091,343	83.48	413,593	60,047	353,224	231,504	
Chicago & Eastern Ill.....	1,130	1,810,725	427,182	2,455,465	319,326	22,027	984,497	742,638	87.50	306,745	100,000	206,442	194,662	
Chicago & Erie.....	269	906,472	84,907	1,090,233	121,062	17,302	32,817	814,569	74.68	276,164	40,909	235,195	137,920	
Chicago & North Western.....	8,405	8,624,397	3,192,911	13,162,743	2,947,743	118,714	5,919,726	12,447,192	94.57	714,639	725,000	-10,361	-2,247,287	
Chicago, Burlington & Quincy.....	9,370	10,334,259	3,070,117	14,767,614	3,147,893	127,842	6,979,137	13,981,609	94.68	786,005	724,944	59,860	-1,385,919	
Chicago Great Western.....	1,496	1,833,228	474,725	2,508,781	383,377	29,987	861,966	1,993,629	105.86	-110,828	81,836	-192,665	-406,460	
Chicago, Indiana & Louisville.....	1,654	937,214	269,701	1,327,997	379,381	29,987	561,922	1,195,527	90.02	132,471	47,375	84,902	-89,653	
Chicago, Detroit & Canada Grand T. Jct.....	62	84,086	8,230	106,002	30,453	2,255	102,068	167,390	137.91	-61,388	4,596	-65,984	-133,841	
Chicago Junction.....	12	.....	.....	.....	67,850	378,129	10,543	252,648	204.29	266,809	2,994	-269,802	-235,131
Chicago, Milwaukee & St. Paul.....	10,629	9,544,359	2,706,574	13,846,253	2,846,602	133,970	3,832,551	12,298,228	88.81	1,548,026	677,263	863,720	239,560	
Chicago, Rock Island & Gulf.....	461	413,961	111,948	554,382	87,714	9,269	224,928	414,296	74.70	140,286	17,833	122,452	122,210	
Chicago, Rock Island & Pacific.....	7,662	7,229,747	5,002,883	10,999,229	2,364,695	113,308	2,544,574	10,568,820	96.09	430,407	466,181	-36,581	-1,606,548	
Chicago, St. Paul, Minn. & Omaha.....	1,749	1,649,289	702,736	2,540,920	504,583	31,169	1,093,544	2,158,812	84.96	382,108	139,215	244,320	165,746	
Chicago, Terre Haute & S. E.....	374	515,106	22,064	547,433	145,281	4,884	20,124	434,726	79.41	112,707	19,500	93,207	168,397	
Cincinnati, Ind. & Western.....	321	280,270	59,220	379,765	58,574	3,447	157,929	377,939	104.44	-16,083	13,539	-29,622	26,502	
Cincinnati Northern.....	245	758,165	18,333	786,765	103,965	3,428	120,769	322,310	111.23	-32,544	10,465	-43,009	-95,744	
Cleveland, Cincinnati, Chicago & St. L.....	2,408	4,635,604	1,718,840	6,944,254	1,413,908	9,270	3,501,454	7,268,210	104.67	-323,956	234,510	-558,596	-1,860,532	
Cleveland & Southern.....	1,099	853,015	229,057	1,166,321	308,913	11,653	409,753	1,052,388	90.23	113,933	59,792	53,569	-5,201	
Colorado & Wyoming.....	43	25,827	976	26,803	16,262	108	4,138	22,949	92.90	6,514	5,000	1,514	-15,388	
Colorado & Hudson.....	836	3,650,921	268,151	4,118,368	594,822	36,614	2,188,839	2,031,612	101.42	-38,512	81,500	-140,012	-593,524	
Delaware, Lackawanna & Western.....	936	4,713,875	1,120,470	6,228,599	862,058	77,796	2,834,404	5,602,070	84.59	1,020,357	389,584	630,696	-568,369	
Denver & Rio Grande.....	2,585	1,482,841	631,654	2,339,873	591,987	34,360	1,246,230	2,797,056	119.54	-457,184	136,000	-593,213	-921,886	
Denver & Salt Lake.....	255	207,650	48,258	267,060	65,550	929	108,788	232,586	87.09	34,474	9,000	25,471	57,065	
Detroit & Mackinac.....	376	121,610	33,105	163,383	29,940	2,201	78,960	159,689	97.62	3,899	11,654	-7,755	-70,635	
Detroit, Toledo & Ironton.....	454	367,276	16,960	408,374	129,658	7,112	200,736	478,926	117.21	-70,352	8,669	-79,016	-30,154	
Duluth & Iron Range.....	298	1,499,052	21,803	1,520,855	174,496	1,272	307,789	630,466	38.65	1,000,528	83,380	917,066	186,723	
Duluth, Missabe & Northern.....	402	2,783,311	52,490	3,109,224	304,857	492,246	23,849	965,700	31.06	2,143,524	158,474	1,985,050	-391,643	
Duluth, Winnipeg & Pacific.....	178	177,544	24,446	206,633	48,043	4,663	90,740	185,127	89.59	21,506	12,034	9,472	20,183	
Duluth, South Shore & Atlantic.....	614	344,888	111,656	500,117	148,109	4,884	195,973	449,949	89.96	50,168	25,000	25,162	-5,034	
East St. Louis Connecting.....	3	.....	.....	.....	110,631	354	83,322	3,931	114.41	-15,945	2,800	-18,745	-11,094
Elgin, Joliet & Eastern.....	834	1,923,921	7,135,895	218,610	430,795	7,820	704,575	1,403,160	65.69	732,735	38,734	693,916	601,544	
Erie.....	1,989	6,882,431	1,122,792	8,996,439	1,486,989	112,705	4,521,645	9,229,929	103.74	-333,496				

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JUNE, 1920—CONTINUED

Name of road.	Average mileage operated during period.	Operating revenues			Operating expenses			Total.	Operating ratio.	Net from railway operation.	Railway tax accruals.	Operating income (or loss).	Increase (or decr.) comp. with last year.
		Freight.	Passenger.	Total.	Way and structures.	Traffic.	Trans-shipment.						
Great Northern.....	8,175	\$7,492,289	\$1,818,545	\$9,310,834	\$2,726,121	\$130,381	\$3,713,437	\$221,615	82.91	\$1,798,778	\$876,154	\$912,353	\$124,509
Green Day & Western.....	232	70,953	48,396	119,349	27,068	1,187	30,689	109,369	114.26	30,721	36,824	30,721	30,721
Gulf & Ship Island.....	307	140,802	47,265	188,067	71,129	1,410	86,851	126,366	110.64	27,978	36,873	58,721	43,095
Gulf, Colorado & Santa Fe.....	1,907	1,071,099	509,120	1,580,219	541,254	27,487	898,723	1,102,002	111.43	195,869	87,916	282,999	237,068
Gulf, Mobile & Northern.....	470	231,763	33,537	265,300	134,559	9,343	138,091	375,939	124.71	74,495	13,746	88,241	76,218
Hocking Valley.....	350	1,156,818	106,037	1,262,855	181,167	5,895	497,502	1,284,428	94.76	70,853	69,797	1,056	284,910
Houston & Texas Central.....	923	521,989	264,080	786,069	183,333	17,723	468,652	900,649	104.84	41,564	50,965	93,166	230,693
Houston East & West Texas.....	190	1,183,680	58,449	1,242,129	137,606	3,193	102,506	200,988	108.85	22,852	15,909	39,004	53,898
Illinois Central.....	4,799	2,107,056	1,179,187	3,286,243	2,333,572	87,701	4,891,944	11,056,371	98.90	122,817	632,485	516,729	1,339,933
Indiana Harbor Belt.....	120	.....	.....	708,219	143,062	2,680	687,258	980,814	138.45	272,595	12,535	285,131	316,733
International & Great Northern.....	1,159	984,247	296,210	1,280,457	246,058	21,657	714,621	1,375,601	97.13	40,516	32,500	7,953	72,418
Kanawha & Michigan.....	176	352,743	53,394	406,137	98,229	3,482	214,810	18,273	126.56	113,698	25,000	138,698	187,399
Kansas City, Mexico & Orient.....	272	101,015	21,482	122,497	42,098	4,696	70,424	161,719	125.65	33,014	7,700	40,714	52,350
Kansas City, Mexico & Orient of Texas.....	465	125,833	22,546	148,379	69,099	3,909	84,784	208,805	134.39	53,434	6,925	60,359	10,418
Kansas City Southern.....	779	1,131,495	245,872	1,377,367	247,676	31,138	565,582	1,194,866	81.09	278,474	71,969	206,456	221,954
Kansas, Oklahoma & Gulf.....	329	140,412	23,417	163,829	47,605	2,476	92,683	198,261	114.26	24,754	10,500	35,253	31,018
Lake Erie & Western.....	741	879,446	66,901	946,347	213,793	15,656	473,814	1,345,608	134.62	346,098	35,249	381,343	269,742
Lake Terminal.....	12	89,980	.....	89,980	20,512	.....	74,024	1,000	105.18	6,008	5,893	11,902	14,072
Lehigh & Hudson River.....	96	241,337	3,650	244,987	35,330	1,917	106,021	194,834	77.04	58,037	8,600	49,437	26,640
Lehigh & New England.....	220	334,378	1,705	336,083	76,908	2,681	138,131	291,541	82.86	60,304	14,803	45,501	33,113
Lehigh Valley.....	1,435	4,789,463	658,497	5,447,960	1,001,774	82,908	3,882,084	6,881,245	116.41	970,410	206,000	1,176,410	1,521,113
Long Island.....	1,398	642,984	1,374,417	2,017,401	277,398	22,014	1,094,910	1,878,351	77.14	556,411	104,410	451,851	667,660
Los Angeles & Salt Lake.....	1,168	1,032,954	606,551	1,639,505	218,687	33,125	638,590	1,269,206	68.52	382,974	77,534	505,413	263,859
Louisiana & Arkansas.....	362	239,839	47,311	287,150	74,776	4,141	105,046	1,374	79.41	61,573	18,596	42,976	90,574
Louisiana Ry. & Navigation.....	343	259,839	46,117	305,956	90,256	8,901	166,404	339,278	101.99	6,634	14,000	20,634	31,657
Louisiana Western.....	207	305,301	100,983	406,284	100,911	7,656	99,380	14,946	67.44	145,448	20,320	124,931	11,370
Louisville & Nashville.....	5,040	7,420,690	2,060,601	9,481,291	2,280,129	3,266,373	5,416,396	11,511,055	113.69	1,386,844	302,607	1,689,451	1,330,185
Louisville, Henderson & St. Louis.....	199	167,834	58,004	225,838	40,571	5,500	91,634	213,043	87.89	29,340	7,214	22,115	28,473
Maine Central.....	1,216	1,267,677	456,520	1,724,197	308,553	15,982	876,351	1,616,483	87.29	235,319	95,742	139,569	224,200
Maryland, Delaware & Virginia.....	82	64,050	36,268	100,318	14,285	789	79,290	131,224	124.69	25,992	2,000	27,992	26,324
Michigan Central.....	1,862	4,072,794	2,231,368	6,304,162	1,435,171	85,865	3,640,979	7,804,470	107.10	497,677	246,530	744,207	2,215,996
Mineral Range.....	1,046	1,080,556	222,698	1,303,254	353,226	18,849	749,664	1,010,441	145.85	21,144	3,100	24,244	32,323
Minneapolis & St. Louis.....	1,546	1,080,556	222,698	1,303,254	353,226	18,849	749,664	1,010,441	145.85	21,144	3,100	24,244	32,323
Minneapolis, St. Paul & Sault Ste. Marie.....	4,243	2,959,569	789,519	3,749,088	641,420	45,911	1,561,958	3,273,527	110.44	1,519,077	273,512	2,052,589	288,366
Minnesota & International.....	194	60,577	29,666	90,243	44,078	568	39,330	105,886	109.72	9,387	2,745	12,132	2,946
Mississippi Central.....	164	49,466	19,717	69,183	34,401	6,195	32,786	83,302	190.72	67,909	5,000	72,909	60,836
Missouri & North Arkansas.....	364	95,996	41,845	137,841	42,166	3,326	65,597	9,914	193.58	34,865	5,893	40,757	43,174
Missouri, Kansas & Texas.....	1,715	2,271,530	720,952	2,992,482	1,038,122	43,084	1,382,245	3,400,043	105.12	1,656,673	112,202	2,768,875	731,753
Missouri, Kansas & Texas of Texas.....	1,739	1,167,604	773,667	1,941,271	584,432	34,537	1,299,683	2,788,897	132.84	689,497	59,583	749,080	1,680,651
Missouri Pacific.....	7,299	6,896,731	1,801,041	8,697,772	1,684,349	159,294	3,625,063	244,607	83.60	1,542,798	333,397	1,209,401	323,677
Mobile & Ohio.....	1,165	1,091,148	180,362	1,271,510	423,108	32,929	837,655	1,910,559	139.40	59,652	59,652	59,652	382,453
Monongahela Connecting Ry.....	7	.....	249,250	249,250	32,453	561	111,971	192,868	77.37	56,382	92,474	38,092	23,145
Monongahela Railway.....	108	253,969	26,336	280,305	117,748	1,621	90,137	320,637	111.00	31,785	6,293	38,078	113,350
Montour.....	56	142,714	1,098	143,812	34,139	1,067	41,712	136,643	91.05	13,424	2,431	10,993	36,019
Morgan's La. & Texas R. & S. S. Co.....	490	761,530	180,617	942,147	255,031	10,313	284,975	29,838	73.03	273,695	42,938	230,645	92,299
Nashville, Chattanooga & St. Louis.....	1,247	1,499,810	436,385	1,936,195	333,700	53,918	851,645	508,913	78.04	259,955	42,500	216,913	182,410
Nevada Northern.....	165	143,742	10,746	154,488	25,288	1,369	51,645	73,791	97.06	73,791	8,267	65,204	29,455
New Jersey & New York.....	47	14,278	81,498	95,776	13,303	1,065	65,232	9,345	97.86	1,927	1,927	1,927	4,745
New Orleans Great Northern.....	284	138,894	54,720	193,614	49,107	5,861	86,771	189,570	92.24	15,944	12,244	3,676	43,745
New Orleans, Texas & Mexico.....	191	182,692	42,095	224,787	62,922	4,889	61,837	8,556	74.87	58,179	12,167	46,011	61,113
New York Central.....	6,069	17,867,424	8,911,937	26,779,361	9,478,554	325,415	15,797,739	957,233	114.43	3,457,363	861,929	5,323,199	11,511,902
New York, Chicago & St. Louis.....	574	1,998,269	108,050	2,106,319	269,803	47,144	806,213	83,125	71.67	617,693	135,000	482,680	146,201
New York, New Haven & Hartford.....	1,965	5,034,134	1,421,074	6,455,208	2,077,091	4,880,042	318,277	9,173,080	87.48	1,312,819	339,000	973,603	4,636
New York, Ont. & Western.....	569	677,585	295,427	973,012	199,403	11,618	467,153	27,749	81.37	216,790	187,190	25,197	27,182
New York, Susquehanna & Western.....	135	269,605	58,975	328,580	49,370	3,022	255,464	11,833	105.28	19,847	18,674	38,529	27,812
Newburgh & South Shore.....	7	.....	.....	.....	15,052	.....	83,639	4,460	99.97	37	8,387	8,350	7,597
Norfolk & Western.....	2,199	5,270,929	829,110	6,099,039	1,268,784	67,391	3,724,764	212,399	127.94	1,787,578	425,000	2,212,726	2,926,183
Norfolk Southern.....	944	427,827	156,263	584,090	118,678	11,678	305,254	27,760	99.60	2,910	16,666	14,288	14,393
Northwestern Pacific.....	538	349,707	257,349	607,056	110,887	6,165	268,899	16,089	70.41	201,719	25,536	176,183	61,065
Northern Pacific.....	6,655	5,008,205	2,114,431	7,122,636	1,850,601	60,803	2,527,420	199,456	78.69	1,676,233	623,666	1,051,772	413,025
Oregon Short Line.....	2,358	2,320,201	729,073	3,049,274	643,604	37,321	1,170,204	2,580,068	77.11	765,572	140,248	906,820	65,233
Oregon-Wash. R. R. & Nav. Co.....	2,223	1,690,204	782,878	2,473,082	346,670	556,911	1,190,508	139,627	86.15	371,649	182,333	192,240	94,410
Panhandle & Santa Fe.....	773	549,120	141,683	690,803	178,819	4,672	722,928	722,928	99.88	19,936	19,936	16,889	13,717
Peoria & Pekin Union.....	19	22,662	3,789	26,451	20,567	466	83,142	136,312	126.59	28,635	9,500	38,135	60,866
Pere Marquette.....	2,230	2,475,015	595,015	3,070,030	503,253	44,284	1,389,250	110,060	81.12	635,739	61,697	574,006	135,943
Perkinston.....	41	65,940	9,701	75,641	17,351	17	36,903	340	61.37	31,501	3,276	28,225	31,794
Philadelphia, Bethlehem & New England.....	1,106	5,664,313	929,434	6,593,747	1,752,151	19,109	74,842	1,595	90.85	11,715	1,030	10,684	12,577
Philadelphia & Reading.....	1,126	1,504,096	256,121	1,760,217	887,842	3,195,476	142,124	6,056,745	85.38	1,036,752	207,672	828,758	1,360,751
Pittsburgh & Lake Erie.....	224	1,504,096	256,121	1,760,217	887,842	3,195,476	142,124	6,056,745	85.38	1,036,752	207,672	828,758	1,360,751
Pittsburgh & Lake Erie.....	224	1,504,096	256,121	1,760,217	887,842	3,195,476	142,124	6,056,745	85.38	1,036,752	207,672	828,758	1,360,751

Traffic News

Brigadier General W. D. Conner has been appointed chief of the inland and coastwise waterways service and chief of transportation of the War Department, succeeding Brigadier General F. T. Hines, resigned.

The American Railway Express Company, which has an application pending before the Interstate Commerce Commission for increases in express rates amounting to about \$72,000,000 a year, is expected to file shortly a supplemental application to cover the \$30,000,000 wage award of the Railroad Labor Board.

Illinois Roads Apply for Higher Passenger Rates

Railroads operating in Illinois, represented by R. B. Scott, general counsel of the Chicago, Burlington & Quincy, and R. B. Fletcher, general counsel of the Illinois Central, appeared before the Illinois Public Utilities Commission on August 9, in an effort to nullify the two cents a mile legal passenger rates in that state and substitute therefor the three cents per mile rate in effect by the roads while under federal control. The contention of the roads is that the rates were raised while the roads were under federal control and that the Illinois state law fixing the legal intrastate rate at two cents a mile was thereby nullified and that the three cent rate should now be the basis upon which the commission should grant further increases.

The commission has held that the recent passing of the roads from federal to private control returns the state two cent law into power and that the commission lacks authority to nullify the state statute which specifically fixes the legal rate per mile. Should the commission now rule that the two cent rate is still in effect the roads operating in Illinois will be forced to appeal to the Interstate Commerce Commission on the grounds that the state rate is discriminatory.

Effect of Rates on Prices

Just what the increased freight rates which will soon go into effect mean to the average consumer in the way of contributing to the cost of necessary articles of clothing and standard food products is shown in some interesting illustrations made by the freight traffic department of the Southern Railway System.

The rate on shoes from Boston to Atlanta is now \$1.64 per 100 pounds, making the transportation charge on a pair of shoes, which with its share of the packing weighs three pounds, approximately five cents. The new rate will be \$2.18½ per 100 pounds, making the transportation charge for the same pair of shoes approximately 6½ cents.

Shirts are shipped from New York to New Orleans by freight for \$1.54 per 100 pounds, making the transportation charge on a five-ounce shirt about half a cent. The new rate will be \$2.05½ per hundred pounds, making the charge on the same five-ounce shirt about two-thirds of one cent. The old \$1.50 shirt is selling for \$3 and up.

Clothing manufactured in Chicago can now be shipped to Jacksonville for \$1.83 per hundred pounds, or less than 11 cents for a suit which with its share of the packing weighs six pounds. The new rate will be \$2.38½ per hundred pounds, or about 14 cents on the six-pound ready-made which formerly was offered for \$30 but now cannot be taken home for less than \$60.

Coming to articles of food, the rate on fresh beef from Chicago to Birmingham is now 82 cents per hundred pounds, less than one cent per pound. The new rate will be 1.06½ per hundred pounds, or slightly more than a cent per pound. Beef that formerly sold for 20 cents per pound has been bringing 35 cents.

Sugar can now be shipped from New Orleans to Greensboro, N. C., for 55 cents per 100 pounds, or just about half a cent per pound. The new rate will be 69 cents per hundred pounds, still less than three-fourths of a cent per pound.

These illustrations, which are of articles and commodities taken at random, may be considered as fairly representative

of the addition to the transportation cost of articles used in the South which will result from the increase in rates. Similar illustrations could be made on almost every article used in the household, except coal, which, being shipped and sold by the ton, will show a relatively higher transportation cost in proportion to its value.

Railroads Asked to Aid in

Re-Establishing Lake Traffic

Following assurances of Chairman Clark, of the Interstate Commerce Commission, at a hearing in Washington, August 9, that the proposal to readjust rail rates between the seaboard and upper lake ports so as to make lake transportation of grain again profitable, was receiving consideration by the commission, Governor W. L. Harding, of Iowa, and J. R. Howard, president of the American Farm Bureau Federation, requested Daniel Willard, of the Association of Railway Executives, to ask the lines affected to voluntarily agree to the proposed rate readjustment.

"Boats capable of carrying the equivalent of 75,000 carloads of grain per trip would be immediately available if these rates were properly adjusted," said Governor Harding. "There is no justification for a rate of 10 cents per bushel between Buffalo and New York when the rate for the entire haul from Chicago to New York is only 13.8 cents. The rate for the western end of the trip should be raised and that for the eastern end lowered. The rail service between Chicago and Buffalo represents 60 per cent of the rail service between Chicago and New York. If this 60 rail service between Chicago and Buffalo represents 60 per cent ment could be saved by utilization of the lakes and diverted to other districts and commodities it would soon bring about a very notable improvement in the entire transportation situation. Cars should shuttle back and forth between the grain fields and the lake elevators at the western end of the line and in the same way between Buffalo and the seaboard, thus avoiding the long hauls and empty return trips now necessitated."

Coal Production

The strike in the Middle West caused the production of soft coal during the last week of July to drop below the 1919 level for the first time this year, according to the weekly bulletin of the Geological Survey. The total output, including lignite and coal coked at the mine, is estimated at 9,357,000 net tons, a decrease when compared with the latest pre-strike week, of 1,523,000 net tons. Telegraphic reports of coal loaded by the principal carriers indicate that production recovered but little on August 2, but that since then there has been steady improvement. Practically all mines in Indiana, for example, were back at work on Thursday, August 6. Production during the first 181 working days of the last four years has been as follows (in net tons):

1917.....	320,834,000	1919.....	258,144,000
1918.....	339,019,000	1920.....	302,727,000

Unlike the production of soft coal, that of anthracite increased during the week ended July 31. Shipments originated by the principal carriers (in part estimated) amounted to 36,487 cars, the largest since mid-June. The total output, including mine fuel and local sales, is estimated at 1,874,000 net tons. This was 104,000 tons greater than that of the preceding week, and 62,000 greater than during the corresponding week of 1919. The closing of mines because of labor disturbances reduced the demand for cars and was the primary cause for a decrease in the percentage of time lost on account of transportation disability. Over the country as a whole the transportation loss during the week of July 24 was 29.6 per cent, as compared with 32.3 per cent during the preceding week. Examination of the reports from fields not affected by the strike, however, indicates no widespread improvement in car supply. In some districts a change for the better was indeed reported, but in others the losses grew even more acute than before. Improvement in the car supply was reported from the Pittsburgh district, from sections A and C of central Pennsylvania, from the Cumberland-Piedmont field, the high volatile fields of southern West Virginia, northeastern Kentucky and western Kentucky. In Indiana, Ohio, West Virginia Panhandle and Southeastern Kentucky, little change occurred. Among the districts to report a less

adequate car supply were Westmoreland, Section B of central Pennsylvania, Somerset, Fairmont, New River, Hazard and southwestern Virginia.

The first week of operation of the amended lake order (Service Order No. 10) saw 775,318 tons of soft coal dumped at Lake Erie ports. This was 112,712 tons more than the dumpings of the preceding week, which had been the largest of the present season, but was still below those of the corresponding period of 1918 and 1919.

The cumulative shipments from the beginning of the year now stand at 6,814,074 net tons, as against 12,163,000 in 1918 and 13,188,000 in 1919. The year 1920 is thus in round numbers five and a third million tons behind 1918 and six and a third million behind 1919.

Tidewater shipments during the week ended July 31 established what is believed to be a new record for coal handled over tidewater piers in a single week. The total dumpings at the four North Atlantic ports and Charleston, according to reports furnished the Geological Survey by courtesy of the American Railroad Association, were 27,641 cars. This exceeded the preceding week by 1,771 cars, and was 4,661 cars greater than the weekly average for June, 1920, hitherto the maximum month. Statistics on the destination of coal dumped at tidewater during the week ended July 31 are at present available only for the port of Hampton Roads. A total of 604,000 net tons were handled by the three exchanges there, an increase of 51,000 tons over the preceding week. The increase was almost entirely in exports; there was a slight decrease in the quantity shipped to New England. The average movement to New England through Hampton Roads was 137,000 net tons per week during the five weeks ended July 31. Throughout this period Service Order No. 6 was in effect. Order No. 11, directing further measures of priority and preference for the New England movement, did not become effective until August 2.

The rail movement of bituminous coal to New England continued to be very heavy during the last week of July. According to reports furnished the Geological Survey by the American Railroad Association, 6,368 cars were forwarded to New England destinations through the five Hudson River gateways of Harlem River, Maybrook, Albany, Rotterdam and Mechanicsville. With the exception of the preceding week, this was the largest movement of the year and one of the largest of record. It was 1,489 cars, or 30 per cent, greater than that of the corresponding week of 1919.

An optimistic view of the soft coal situation is presented by J. D. A. Morrow, vice-president of the National Coal Association. Following a 10 days' trip through the East, he said that the railroads, for the most part, have diligently taken hold of the intricate problem, and, as a result of increased car supply, operators of mines supplying the Northwest and New England were able last week to ship a much greater tonnage of coal to those points than before, and that there is every expectation that the wants of the country will be fully met.

"The Baltimore & Ohio, the Chesapeake & Ohio, the Norfolk & Western, the Virginian and other large coal loading roads, are performing creditably," said Mr. Morrow. "The Pennsylvania is still a little disappointing, but the executives of the road are making vigorous efforts to improve loading and shipment.

"Movement to the lakes is not yet up to schedule, being on the 7th of August 10,745 cars behind the scheduled 4,000 cars daily. Practically all of that shortage is due to the insufficient car supply on the Pennsylvania. The Wheeling & Lake Erie was also about 1,000 cars behind, due largely to congestion on the road. This is now being rapidly remedied.

"The situation as to New England is distinctly encouraging. The wholesale coal men have organized a committee to work in conjunction with the operators and the railroads and coal is moving to tidewater ports fully up to the 1,250,000 tons called for under the New England priority schedule. The New England railways were endeavoring to move their fuel supply all-rail, making it difficult for other New England consumers to obtain their tonnage through the New England gateways, but the railroads now have arranged for the movement of 382,000 tons of locomotive fuel by water. This one fact alone insures the success of the New England program."

Commission and Court News

Interstate Commerce Commission

The commission, which is required by section 25 of the interstate commerce act to prescribe a form of through export bill of lading for issuance by railroads in connection with water carriers whose vessels are registered under United States laws, has issued a notice to carriers and shippers saying that in response to its requests separate form of through export bills of lading have been submitted by lines in Official and Western classification territories and that Lincoln Green, as chairman of the executive committee of the Southern Freight Association, has submitted two forms in use by the Southern railway which are similar to that proposed by the lines in Official territory. The commission will adopt the form submitted by the western lines as the basis for further proceedings in its investigation. This is a modification of the form approved by the commission in its former report. A hearing will be held before Commissioner Woolley at Washington on September 20.

Mississippi Valley Notes

The commission has made public a tentative report of its special examiner, R. V. Pitt, in the matter of the readjustment of rates in Mississippi Valley territory as required by the fourth section order entered by the commission in the Memphis-Southwestern investigation. The report is based on the final proposals of interested carriers and shippers made at a conference authorized by the commission held on June 28. The report was accompanied by a statement by Commissioner Daniels that the commission had authorized him to say that the rates in Mississippi Valley territory are required by the order to be readjusted on or before October 1 and it is of the utmost importance that the revision be accomplished by that date if possible. It is, therefore, imperative that the roads file rates which will not require suspension, and although the proposed adjustment has not yet been approved by the commission, there would be a strong presumption of its reasonableness. The parties interested are requested to give careful consideration to the report and furnish the commission by August 20 with their views on the matter, including a statement by the carriers as to whether they will establish the rates proposed. The report involves class rates between Ohio river crossings, St. Louis, Chicago and related roads, on one hand, and points in Mississippi Valley on the other hand, revised to conform to the provisions of the fourth section. The examiner's report says that the rates should be readjusted to preserve as nearly as possible the present general level of those rates and the revenues derivable therefrom. For the purpose of this revision the present plan of making rates between points on and north of the Ohio river and Mississippi Valley territory with relation to the rates to and from Cairo should be continued and after the revision is effected all rates are to be increased by the percentages allowed by the commission in the general rate case, Ex Parte 74.

State Commissions

The New York State Public Service Commission, second district, will hold a hearing at Albany on August 17 to consider the application of the railroads for authority to make general advances in freight and passenger rates.

The Publicity Utility Commissioners of New Jersey will give a hearing on August 17 on the question of advancing passenger and freight rates in New Jersey to correspond with the advances which are to be made in interstate tariffs. The Board assumes that tariffs are being prepared showing increases corresponding to those which are to be made in interstate rates.

Equipment and Supplies

Locomotives

THE GREEN BAY & WESTERN has ordered from the American Locomotive Company 1 six-wheel switching locomotive. This locomotive will have 19 by 26 in. cylinders and a total weight in working order of 128,000 lb.

Freight Cars

THE COMMONWEALTH EDISON COMPANY, Chicago, is inquiring for 1,000 gondola cars of 70 tons capacity.

THE TENNESSEE COAL & IRON RAILROAD COMPANY is asking figures on 300 ore cars of 50 tons capacity.

THE WEST VIRGINIA PULP & PAPER COMPANY, New York, is inquiring for 20 coal cars of 70 tons capacity.

THE PIEDMONT & NORTHERN has ordered 50 flat cars of 40 tons capacity from the Pressed Steel Car Company.

THE CLINCHFIELD PORTLAND CEMENT COMPANY, Nazareth, Pa., is inquiring for 45 hopper cars of 55 tons capacity.

THE ARGENTINE STATE RAILWAYS have ordered 500 box cars of 30 tons' capacity from the Standard Steel Car Company.

THE AMERICAN TRADING COMPANY, 25 Broad street, New York, is in the market for 30 second-hand box cars of 80,000 lb. capacity.

THE DONNER STEEL COMPANY, Buffalo, N. Y., has ordered 250 hopper cars of 70 tons' capacity from the Pressed Steel Car Company.

THE COLUMBIA STEEL & SHAFTING COMPANY, Pittsburgh, Pa., has ordered 50 gondola cars of 50 tons capacity from the Pressed Steel Car Company.

THE CONSOLIDATION COAL COMPANY, Fairmont, W. Va., has ordered 110 hopper cars of 55 tons capacity from the Pressed Steel Car Company.

THE NEW YORK SHIPBUILDING CORPORATION, Camden, N. J., has ordered 35 flat-bottom gondolas of 50 tons capacity from the Pressed Steel Car Company.

THE PENNSYLVANIA EQUIPMENT COMPANY, 1420 Chestnut street, Philadelphia, Pa., is in the market for second-hand equipment, as follows: 50 flat cars, 75 gondola cars and 50 box cars.

THE UNITED FRUIT COMPANY is inquiring for 40 steel underframe flat cars of 30 tons capacity and has given an order to the Pressed Steel Car Company for 929 steel superstructures for side dump cane cars.

THE NASHVILLE, CHATTANOOGA & ST. LOUIS, reported in the *Railway Age* of June 25 as inquiring for 100 freight cars, has given an order to the Pressed Steel Car Company for 100 hopper cars of 55 tons capacity.

THE UNION TANK CAR COMPANY has placed orders for 3,900 tank cars. This is in addition to the 5,500 previously ordered in the latter part of 1919 for delivery this year. The company expects to have all these new cars delivered before January 1, 1921; this will make the company's total ownership of cars about 30,000.

Passenger Cars

THE CHICAGO & NORTH WESTERN is inquiring for 25 passenger cars.

THE GREAT WESTERN OF BRAZIL is inquiring for 9 first-class passenger coaches.

THE PENNSYLVANIA EQUIPMENT COMPANY, 1420 Chestnut street, Philadelphia, Pa., is in the market for three second-hand steel underframe electrically lighted observation end parlor cars.

Supply Trade News

New offices have been opened by the **American Rolling Mill Company**, of Middletown, Ohio, in the Hibernia Bank building, New Orleans, La., to cover the southern states, including Texas, excepting El Paso. The office will be in charge of C. C. Lynd, who has represented the American Rolling Mill Company at Atlanta, Ga., for several years past.

James T. Lee has been added recently to the sales engineering staff of the **Southwark Foundry and Machine Company**, Philadelphia, Pa. Mr. Lee for several years past was vice-president in charge of sales of the Hanna Engineering Works, Chicago. It is the purpose of the Southwark Foundry and Machine Company to greatly broaden its field of activity by adding to its present complete line of hydraulic and power machinery a full line of pneumatic and hydro pneumatic riveters and foundry molding machines.

Exum M. Haas has been appointed manager of the railroad department of the **H. K. Ferguson Company**, Cleveland, Ohio. Mr. Haas graduated from Purdue University in 1905. For eight years after completing his engineering course he was actively engaged in railroad maintenance and construction. From 1912 to 1917 he was western editor of the *Electric Railway Journal*, and the following three years was sales engineer for the Austin Company. Mr. Haas is a member of the committee on shops and terminals of the American Railway Engineering Association.

The Metal & Thermit Corporation, New York, has made arrangements to secure life insurance for all its employees who have served the company for at least six months. The amount of protection is graded according to the length of service, ranging from \$700 for six months' service up to \$3,000 for 20 years' service. The company bears the entire expense of this insurance, which is in addition to any compensation to which its employees might be entitled under the present state compensation laws. The insurance will be paid in monthly payments during the first year after death.

The Western Electric Company, through its board of directors, has promulgated an order extending the vacation privilege to all departments, which will provide vacations with pay for 4,000 shop employees. Previously factory workers did not receive the same benefits as the members of the sales, clerical, technical and executive branches, and any vacations taken during the summer months were taken at their own expense. The order was issued as an expression of appreciation for faithful service. Vacations of one or two weeks with pay will be granted, depending on the length of service of the employee.

M. E. Hamilton has become associated with the **Automatic Straight Air Brake Company** as field engineer, effective August 15. The company has started to build up its field organization to take care of the brake installations which it will soon be making. Mr. Hamilton entered railroad service on the C. K. & N. Railway (construction company of the Chicago, Rock Island & Pacific) in the fall of 1887 as fireman, at Goodland, Kans., and was promoted to extra engineer in the spring of 1889. Early in 1890 he entered the service of the Atchison, Topeka & Santa Fe as a brakeman, and in 1891 was promoted to conductor, at Galveston, Tex. After the Galveston storm in 1900 he left that road and went to Mexico where he ran an engine on the Mexican Central. In the fall of 1901 he returned to Galveston and worked for the Galveston, Houston & Henderson as engineer and roundhouse foreman until 1903 when he went back to the Santa Fe as engineer. In 1906 he was made air brake instructor; in 1909 he was made general air brake instructor of the system with headquarters at Topeka, where he remained until 1911, when he became railroad representative for the Garlock Packing Company. He re-entered railroad service as general air brake inspector for the St. Louis-San Francisco in 1915 and in 1919

resigned to become a field inspector of the Bureau of Safety, Interstate Commerce Commission.

Titan Steel Corporation Organized

The Titan Steel Corporation has been organized with headquarters at Newark, N. J. It has acquired the plant of the Hewitt Steel Corporation and will enlarge and re-equip the plant for maximum production, with an initial payroll of 1,500 men. The plant in question was conducted during the war for the manufacture of steel shells. Before the war it was owned by the Titan Steel Castings Company, but at the outbreak of hostilities was acquired by the Hewitt Steel Corporation for the making of steel shell castings. It is now being re-equipped for the economical production of railroad specialties. The new company has also acquired by purchase approximately two-thirds of the capital stock of the Crown Castings Company, a holding company for patent rights and privileges for the manufacture of a truck and body bolster for railroad cars. **E. H. Benners**, president of the holding company and patentee of the truck and bolster, is vice-president of the Titan Steel Corporation. The Titan thus obtains the use of these patents and also one for the Benners side frame, which Mr. Benners holds. **H. H. Hewitt**, president of the Hewitt Steel Corporation, is a director of the new company, which also has acquired the manufacturing rights of the Hewitt car trucks and journal boxes. **R. E. Jennings, Sr.**, of New York City, is chairman of the board. He is vice-president, First National Bank of Jersey City; director and former president, Carpenter Steel Company; director, Empire Trust Company of New York; director Eastern Steel Company of Pottsville, Pa.; director, Trust Company of New Jersey, Hoboken; formerly an organizer of the Crucible Steel Company of America. **R. E. Jennings, 2nd**, is president; he was vice-president, Hewitt Steel Corporation. **S. A. Benner** is vice-president; he was formerly general sales manager of the Carnegie Steel Company. **E. H. Benners** is vice-president in charge of sales and is also president of the Crown Castings Company. **E. E. Ledogar**, treasurer, was vice-president of Hunter Glover & Company, bankers, Cleveland. **R. J. Gill**, secretary, is a Baltimore attorney. The directors include: **J. T. Odell**, who was at one time general manager of the B. & O. at Baltimore; president and director, Marquette, Bessemer, Dock and Navigation Company; vice-president and director, Bessemer and Lake Erie Company; **H. H. Hewitt**, president, Hewitt Rubber Company of Buffalo; president, Metric Packing Company of Buffalo; president, Magnus Metal Company of New York City; president, Reading Car Wheel Company of Reading, Pa.; president, Hewitt Steel Corporation; **Hunter Glover**, head of the banking firm of that name, Cleveland, Ohio, and **J. R. Clark**, director of sales of the Federal Reserve Bank of Cleveland.

Trade Publications

MOTIVE POWER FOR SHIPS.—The Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., has issued leaflet 3,482, entitled "Revolution in Ship Propulsion," which traces through the development of motive power for ships. Descriptions of the geared steam turbine drive, the steam-electric drive, oil-engine drive and the oil-electric drive are included in this leaflet.

OIL SEPARATOR.—The Griscom-Russell Company, New York, describes the construction of the Bundy oil separator in a 12-page bulletin, No. 1130. This separator is designed for the removal of oil from exhaust steam in power plants. Sectional views and drawings make the construction and operation clear and instructions are given for cleaning.

FORGING PRESSES.—Bulletin No. 19, containing 24 pages, has been prepared for distribution by the Morgan Engineering Company, Alliance, Ohio, describing briefly the steam hydraulic forging presses built by this company, which consist of single frame types built in sizes from 150 to 500 tons' capacity and four-column types up to 12,000 tons' capacity. A general arrangement drawing of a typical modern forging shop is included in the bulletin.

Railway Construction

CANADIAN NATIONAL RAILWAYS.—This company's forces are carrying out the work of extending and rearranging Island yard at St. John, N. B. The work comprises grading for yard extension, diversion of creek, construction of three pile trestles, signal and telegraph changes, drainage and fencing changes, rearrangement of existing main line and yard tracks, and the laying of new tracks. The approximate quantities of the principal items which this work covers are: rock cut, 5,000 cu. yd.; fill, 45,000 cu. yd.; creek diversion, 60,000 cu. yd.; ballast, 10,000 cu. yd.; lifting and relaying tracks, 3.3 miles; switches, 27; laying new tracks 4.7 miles, switches 31; relining existing tracks, 23; two double track pile trestles; one single track pile trestle.

MARSHALL & EAST TEXAS.—This company has applied to the Interstate Commerce Commission for permission to abandon its line from Gilmer to Marshall and Elysian Fields, Tex., which has not been operated for two years, and to salvage the property.

MICHIGAN NORTHERN.—This company has applied to the Interstate Commerce Commission for a certificate of public convenience and necessity for an extension from Lansing to Midland and Mount Pleasant, Mich.

PERE MARQUETTE.—This company has applied to the Interstate Commerce Commission for permission to dismantle 11.47 miles of main line and 2½ miles of siding between Rapid City and Kalkaska, Mich., which were built to serve a lumber operation which ceased some years ago. It is stated that the traffic has disappeared and the line cannot be operated at a profit.

TEXAS & PACIFIC.—This company has appointed the Strauss Bascule Bridge Company, Chicago, to design a 145 ft. single-leaf double-track railroad bridge to be built over Bayou Plaquemine at Plaquemine, La. The bridge will be a Strauss heel trunnion bascule. Detail plans and specifications are now in course of preparation.

THE CHICAGO & NORTH WESTERN has let a contract to the Ogle Construction Co., Chicago, for a 350-ton coaling station of the balanced bucket type, to be erected at Clinton, Ia.

THE NASHVILLE, CHATTANOOGA & ST. LOUIS.—This road has closed a contract with the Roberts & Schaefer Company, Chicago, for the mechanical equipment for a 375-ton capacity, two pocket, three-track, frame constructed, automatic locomotive coaling plant and "Rands" gravity sand plant for installation at Hollow Rock Junction, Tenn.

THE MISSOURI, KANSAS & TEXAS has closed a contract with the Roberts & Schaefer Company, Chicago, for a 300-ton, two-track, reinforced concrete, automatic electric locomotive coaling and sanding plant, using the Duplex shallow pit loader, for installation at Oklahoma City, Okla.

THE PERE MARQUETTE has closed a contract with the Roberts & Schaefer Company, Chicago, for a 500-ton, 3-track, reinforced concrete, automatic electric locomotive coaling and sanding plant, for installation at Saginaw, Mich.

THE UVALDE & NORTHERN is now under construction from Uvalde, Tex., to Camp Ward, a distance of 40 miles. The contract for the building is held by the L. J. Smith Construction Co., while James Halpin and C. Endsley, representing a syndicate of eastern men, are promoters of the line. Extensive cedar forests will furnish the principal traffic for this road.

"BEST STATION OF ITS SIZE I EVER SAW."—This is the introduction of the report of Inspector J. L. Ridley, on his visit to R. B. Shumate, agent for the Southern Railway at Piedmont, S. C. "I checked all outbound billing for a period of a month and half back without finding a single error. Checked behind agent on twenty-five inbound waybills and found he had made all corrections necessary before taking them into account. Tariff case in excellent condition." And on this showing Mr. Shumate is congratulated by Vice-President Lincoln Green.

Railway Financial News

ARKANSAS & LOUISIANA MIDLAND.—This company has been sold at foreclosure sale to interests holding and controlling what has been known as the Huttig, Mansfield & Nacogdoches system of railroads, together with interests owning oil, gas and carbon properties in Arkansas, Louisiana and Texas. The name of the new company is the Arkansas & Louisiana Missouri.

DELAWARE & HUDSON.—The Interstate Commerce Commission has approved a loan to this company of \$1,125,000 to aid the carrier in making additions and betterments to promote the movement of freight train cars. The carrier is required to finance itself for the same purpose an amount equal to the loan of the government.

EDMONTON, DUNVEGAN & BRITISH COLUMBIA.—This road is now being operated by the Canadian Pacific, as heretofore announced. The Alberta Provincial Government, acting under the provisions of a law passed at the last session of the legislature, proposes to advance \$1,000,000 to the railway company for improvements, taking a mortgage as security. The former management has retired and D. C. Coleman, of Winnipeg, Manitoba, has been elected president, in place of J. D. McArthur. Charles Murphy, of Winnipeg, has been elected vice-president in place of J. K. McLennan, of Edmonton, Alta. Charles Stewart, of Edmonton, Minister of Railways for the Province, represents the government in the board of directors. J. A. McGregor has been appointed manager, with headquarters in Edmonton.

ERIE.—This company has applied to the Interstate Commerce Commission for authority to extend for 10 years certain bonds of its predecessor companies, maturing this year, as to which the company will make an agreement with the holders, the company agreeing to pay principal and interest at maturity. The bonds are in New York & Erie 4th mortgage 5 per cent bonds to the amount of \$2,926,000, Erie Railroad consolidated mortgage 7 per cent bonds to the amount of \$16,891,000 and New York, Lake Erie & Western Railroad Co. first consolidated mortgage coupon 7 per cent bonds to the amount of \$3,699,000.

The Erie is offering to the holders of \$20,590,500 consolidated mortgage 7 per cent bonds, which mature September 1, 1920, to extend these bonds at 7 per cent with payment of \$10 in cash for each \$1,000 bond extended. These bonds are in two series, of which \$16,891,000 are Erie bonds of 1870 and the other \$3,699,500 New York, Lake Erie & Western bonds of 1878.

LONG ISLAND.—This company has applied to the Interstate Commerce Commission for authority to issue equipment trust certificates to the amount of \$1,688,000 and notes to the amount of \$419,279. The commission has ordered a hearing on the application before an examiner at Washington on August 16.

NEW YORK CENTRAL.—It is said that this company is contemplating the acquisition, through purchase or lease, of the Chicago River & Indiana and of the Chicago Junction Railway, both subsidiaries of the Chicago Junction Railway & Union Stock Yards Company. The Chicago River & Indiana operates a total of 47 miles, of which it owns 7 miles of main line and 11 miles of branch line in the city of Chicago. The Chicago Junction Railway operates a total of 24 miles, of which about 2 miles is over the Chicago River & Indiana, in the city of Chicago and the Union Stock Yards.

NORTHERN PACIFIC.—This company has filed with the Railroad Administration its claims for various amounts due the company arising from the federal control of its property. The claims amount to about \$25,000,000.

NORFOLK & PORTSMOUTH BELT LINE.—A hearing on this company's application for authority to issue a note for \$150,000 was held before an examiner of the Interstate Commerce Commission on August 11 at Washington.

Railway Officers

Executive

J. M. Sparling has been appointed assistant to the vice-president of the Grand Trunk, with headquarters at Montreal, Que., succeeding R. J. Foreman, promoted, effective August 1.

E. A. Frost has been appointed president of the newly-organized Arkansas & Louisiana Missouri (formerly the Arkansas & Louisiana Midland), with headquarters at Shreveport, La.; **F. T. Whited** has been appointed first vice-president; **G. S. Prestridge**, second vice-president, and **S. H. Dowell**, secretary and treasurer, with the same headquarters; other appointments are: **G. W. Nelson**, vice-president, St. Louis, Mo.; **F. G. Hudson**, assistant secretary, Monroe, La.; and **F. W. Scott**, assistant to the president, Huttig, Ark.

Financial, Legal and Accounting

H. A. Clifford has been appointed treasurer of the Northern Pacific, with headquarters at St. Paul, Minn., effective August 6, succeeding C. A. Clark, deceased.

J. L. Keenan has been appointed real estate, tax and insurance commissioner of the Arkansas & Louisiana Missouri, formerly the Arkansas & Louisiana Midland, with headquarters at Shreveport, La.

Operating

C. P. Grenfell has been appointed assistant trainmaster of the Rio Grande division on the Atchison, Topeka & Santa Fe, with headquarters at Hurley, N. M., effective August 10.

W. Stevenson has been appointed general manager of the Jonesboro, Lake City & Eastern, with headquarters at Jonesboro, Ark., succeeding F. S. Yantis, resigned, effective August 1.

W. C. Barrett, division engineer on the Lehigh Valley at Sayre, Pa., has been appointed trainmaster of the Seneca division, with headquarters at the same place, succeeding A. C. Kerrick, transferred.

J. F. Anton, trainmaster of the Panhandle & Santa Fe, with headquarters at Amarillo, Tex., has been promoted to superintendent of the Slaton division, with headquarters at Slaton, Tex., effective August 10, succeeding F. J. MacKie, who has been transferred.

S. A. Morrison, superintendent of the Sioux City division of the Chicago & North Western, with headquarters at Sioux City, Ia., has been transferred to the Northern Iowa division, with headquarters at Eagle Grove, Ia., effective August 1, succeeding J. P. Cantillon, who has resigned.

A. B. Buckworth, general manager of the Spokane & British Columbia, with headquarters at Vancouver, B. C., has been appointed general manager of the Pacific Great Eastern, with the same headquarters, effective July 29, succeeding **G. E. Macdonald**, who has resigned.

C. F. Urbutt, trainmaster of the Sioux City & Dakota division of the Chicago, Milwaukee & St. Paul, with headquarters at Sioux City, Ia., has been promoted to assistant superintendent of the Iowa and Dakota division, with headquarters at Mason City, Ia., effective July 1. **J. E. Ryan**, trainmaster of the Chicago Terminal division, has been transferred to succeed Mr. Urbutt, and **M. F. Washburn** succeeds Mr. Ryan.

W. D. Beck, superintendent of the Eastern division of the Western lines of the Chicago & North Western, with headquarters at Norfolk, Neb., has been promoted to superintendent of car service, with headquarters at Chicago, effective August 1, succeeding O. E. Hallberg, who has resigned.

M. E. Pangle, superintendent of the Black Hills division, with headquarters at Chadron, Neb., has been transferred to succeed Mr. Beck. **C. T. Boone**, superintendent of the Wyoming division, at Casper, Wyo., has succeeded Mr. Prangle. **G. A. Holmes**, assistant superintendent of the East Iowa division, with headquarters at Clinton, Ia., has been promoted to succeed Mr. Boone. **F. R. Lloyd**, trainmaster on the Galena division at West Chicago, Ill., has been promoted to succeed Mr. Holmes. **W. H. Noyes**, trainmaster on the West Iowa division, with headquarters at Boone, Ia., has been transferred to succeed Mr. Lloyd and **R. J. Hall**, chief train dispatcher at Boone, Ia., has been promoted to succeed Mr. Noyes.

Traffic

S. S. Hosp has been appointed commercial agent of the Norfolk & Western, with headquarters at Minneapolis, Minn., effective July 1.

Fred C. Mayer, traffic manager of the Oklahoma, New Mexico & Pacific, with headquarters at Ardmore, Okla., has been appointed traffic manager of the St. Louis & Hannibal, with headquarters at Hannibal, Mo., effective August 1.

H. O. Mills, division freight agent of the Toledo & Ohio Central, with headquarters at Toledo, O., has been promoted to assistant general freight agent with the same headquarters, effective June 1, and the office of division freight agent has been abolished.

R. F. Clark has been appointed general agent of the Grand Trunk, with headquarters at Chicago, effective August 1. Other appointments of the Grand Trunk effective the same date are: **A. H. Davis**, general agent, with headquarters at St. Paul, Minn.; **G. H. Brown**, general agent of the freight department, and **C. J. Piper**, commercial agent, with headquarters at Minneapolis, Minn.; **L. E. Ayer**, general agent at Kansas City, Mo.

B. A. Gormaly, division freight agent of the Grand Trunk lines west of the Detroit and St. Clair rivers, with headquarters at Chicago, has been promoted to foreign freight agent, with the same headquarters, effective July 23. Other appointments are: **James Cameron**, chief of the tariff bureau, to assistant general freight agent, and **L. A. Veroneau**, chief clerk in the tariff department, to succeed Mr. Cameron. The position of division freight agent at Chicago has been abolished.

Mechanical

J. E. Stone has been appointed assistant master mechanic of the Southern Pacific, with headquarters at Sparks, Nev., effective August 1, succeeding Paul Jones, who has resigned.

A. D. Williams has been appointed master mechanic of the Texarkana & Fort Worth, with headquarters at Texarkana, Tex., effective August 1, succeeding F. M. Hill, assigned to other duties.

L. K. Sillcox, assistant general superintendent motive power of the Chicago, Milwaukee & St. Paul, has been appointed general superintendent motive power with headquarters at Chicago, succeeding R. R. Warnock.

C. H. Bilty has been appointed mechanical engineer on the Chicago, Milwaukee & St. Paul, with headquarters at Milwaukee, Wis., having returned from service with the United States Railroad Administration. **H. K. Fox**, acting mechanical engineer, has been appointed engineer of tests, with headquarters at the Milwaukee shops, Milwaukee, Wis. The appointments are effective on June 16.

G. Lamberg, division master mechanic of the Aberdeen division of the Chicago, Milwaukee & St. Paul, with headquarters at Aberdeen, S. D., has been promoted to superintendent of shops, with headquarters at Minneapolis, Minn., effective June 16. **E. W. Hopp**, master mechanic of the Racine and Southwestern division, with headquarters at Milwaukee, Wis., has been transferred to succeed Mr. Lamberg and **W. J. Hughes** succeeds Mr. Hopp.

Engineering, Maintenance of Way and Signaling

G. C. Pyle has been appointed chief engineer of the Arkansas & Louisiana Missouri (formerly the Arkansas & Louisiana Midland), with headquarters at Huttig, Ark.

Purchasing and Stores

Dan W. Roberts, division store keeper of the Union Pacific at Armstrong Station, Kansas City, Kan., has been appointed general storekeeper of the Pere Marquette, with headquarters at Detroit, Mich., effective August 1.

Railroad Administration

Max Thelen, director of the Division of Liquidation Claims of the Railroad Administration, expects to resign in September to engage in the practice of law in California.

Obituary

David E. Burley, formerly general passenger and ticket agent of the Oregon Short Line, died recently at Salt Lake City, Utah.

Melvin O. Adams, president of the Boston, Revere Beach & Lynn, died August 9 at his home in Boston at the age of 70. Mr. Adams was born in Ashburnham, Mass., and graduated from Dartmouth College in 1871. He began railroad service in November, 1890, as director and general counsel of the Boston, Revere Beach & Lynn and the following year was elected president, which position he held continuously until his death.

William H. White, president of the Richmond, Fredericksburg & Potomac, died on August 5 at Richmond, Va., at the age of 73. Mr. White was born at Deep Creek, Norfolk County, Va., and was educated in private schools and the Virginia Military Institute. He studied law at the University of Virginia from 1865 to 1867. After engaging in law practice for some years, in 1907 he was elected president of the road mentioned above.

Isham Randolph, at one time chief engineer of the Chicago & Western Indiana, died at his home in Chicago on August 2, at the age of 72 years. Mr. Randolph's first railway work was with the Winchester & Strasburg as an axman. He entered the service of the Baltimore & Ohio in 1872, serving in the employ of this road until 1880, when he was appointed chief engineer of the Chicago & Western Indiana. In 1888 he established himself in Chicago as a civil engineer in general practice. On June 7, 1893, he was appointed chief engineer of the Sanitary District of Chicago, in which capacity he directed the building of the Chicago drainage canal. He occupied this position until 1907, when he resigned, continuing his connection with this project, however, as consulting engineer. From 1905 to 1906 he was a member of the international board of consulting engineers of the Panama Canal Commission.

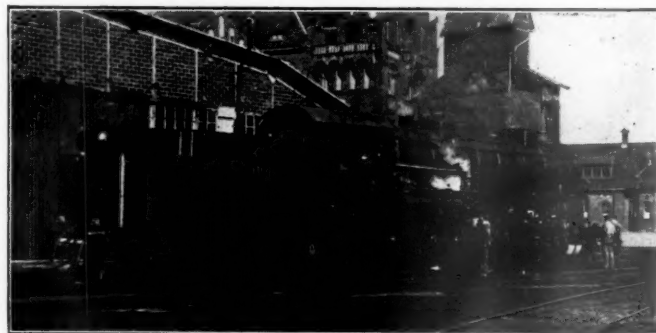


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A New German Locomotive